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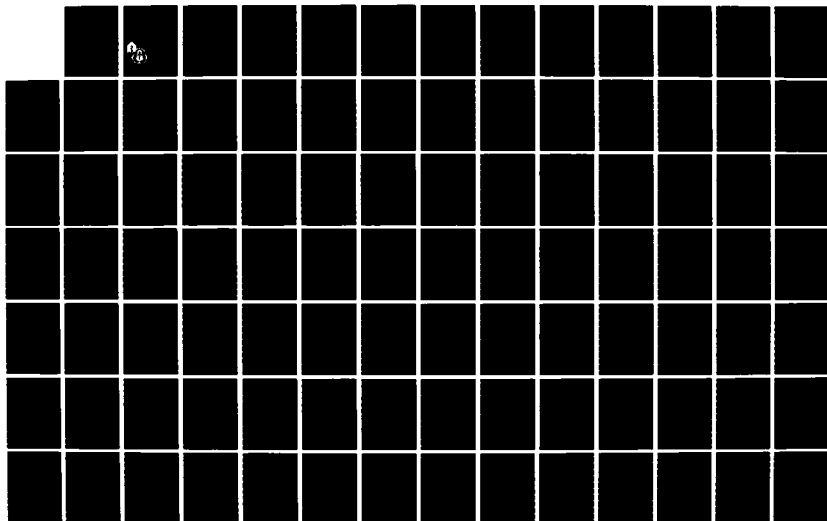
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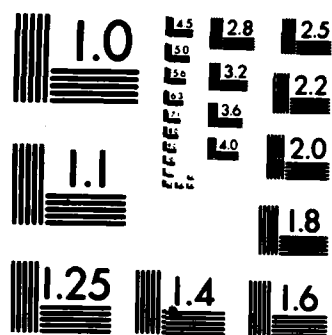
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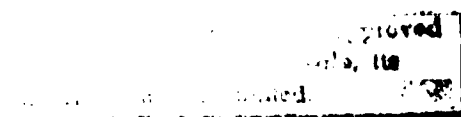
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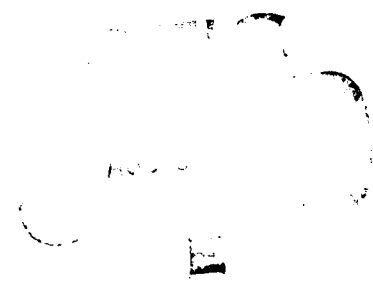
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Annual Progress Report, Fiscal Year 1985, summarizes in two volumes the research performed by the US Army Medical Bioengineering Research and Development Laboratory in projects authorized by The Surgeon General, the US Army, and the Commander, US Army Medical Research and Development Command, and supported by RTDE funds from the US Army Medical Research and Development Command.		

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Chemistry, Environmental Biology, Inorganic Chemistry, Hygiene,  
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RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 305524	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61101A	3A161101A91C	LA	010 APC FI91			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Alkaline Hypochlorite Treatment of Trichothecenes: A Product Study							
12. SUBJECT AREAS 07 03 Organic Chemistry; 15 02 Chemical, Biological, and Radiological Warfare							
13. START DATE 83 10	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.2		15	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.1		17	
19. RESPONSIBLE DOL ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Burrows, E P				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2036				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Trichothecenes; (U) Hypochlorite; (U) Detoxification; (U) Verrucarol; (U) Nuclear Magnetic Resonance							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To further our understanding of mechanisms of chemical detoxification of trichothecenes by identification of the products resulting from alkaline hypochlorite treatment. This research has relevance to the detection of mycotoxins in field water supplies treated with hypochlorite.</p> <p>24. (U) The reaction products are to be separated by chromatographic procedures, and their structures determined by mass spectrometry and nuclear magnetic resonance spectroscopy.</p> <p>25. (U) 8410 - 8509. The structures of the major rearrangement product and a minor rearrangement product derived from verrucarol have been elucidated. A paper describing these results was presented at the 189th American Chemical Society national meeting, Miami Beach, FL, May 1985.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA306956	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 26	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTV U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61101A	3A161101A91C	00	011 APC F195			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	None						
11. TITLE (Precede with Security Classification Code) (U) Development of an Aquatic Thermistor Flowmeter with IBM PC Interface for Monitoring Flow Rates within Laboratory Larval Black Fly Colonies							
12. SUBJECT AREAS 0606 Environmental biology; 0603 Biology							
13. START DATE 84 10	14. ESTIMATED COMPLETION DATE 86 09	15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House				
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)			
b. CONTRACT/GRANT NUMBER		85	0.1	15			
c. TYPE	d. AMOUNT	86	0.3	25			
e. KIND OF AWARD	f. CUM/TOTAL						
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7237				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Arnold, M F				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available) Anderson, L M				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Methodology; (U) Equipment; (U) Aquatic Flowmeter; (U) Black Fly Rearing; (U) Thermistor							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop an aquatic thermistor flowmeter with IBM Personal Computer (PC) interface for use by this Laboratory in the maintenance of a larval black fly colony and to supply reliable flow rate data during controlled release pesticide studies. This program is directly related to the Laboratory's mission for research in military vector control.</p> <p>24. (U) Existing thermistor designs will be modified, and the flowmeter will be interfaced with the IBM PC through an analog/digital acquisition module.</p> <p>25. (U) (8503-8509) Two new designs have been developed and evaluated. Further design and testing will be completed before the best flowmeter is selected for computer interface. An analog/digital (A/D) data acquisition module has been selected to allow computer interface.</p> <p>Boobar, L. R., Stup, J. L., Vorgetts, L. J., and Nelson, J. H. 1985. A preliminary thermistor flowmeter design for stream ecology. Proceedings, 72nd Annual Meeting, New Jersey Mosquito Control Association, Inc. (In Press)</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303166	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61101A	3A161101A91C	LA	072 APC F192			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	None						
11. TITLE (Precede with Security Classification Code) (U) Fate of <u>Bacillus thuringiensis</u> (Serotype H-14) in Mosquito Larvae Killed by Delta-Endotoxin							
12. SUBJECT AREAS 0606 Environmental biology; 0603 Biology; 0613 Microbiology							
13. START DATE 83 10	14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.1		10	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.0		0	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Vorgetts, L J				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7237				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Biological Control; (U) Predation; (U) Bti; (U) Delta-Endotoxin							
23. TECHNICAL OBJECTIVE 24 APPROACH 25 PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The possibility of propagation of <u>Bacillus thuringiensis</u> (serotype H-14) var. <u>israelensis</u> (Bti) and amplification of delta-endotoxin in mosquito larvae cadavers will be investigated. To date, no natural cycle for the propagation of Bti has been reported in the scientific literature. Collateral evidence from evaluations of Bti based insecticides indicates that Bti may develop and propagate in intact mosquito cadavers after larvae ingest a lethal dose of delta-endotoxin, the toxic factor produced by Bti. This program is directly related to the Laboratory's mission for research in military vector control.</p> <p>24. (U) Mosquito larvae (<u>Aedes aegypti</u>) will be infected with known amounts of Bti. Larval mortality will be recorded and cadavers will be incubated for selected periods of time. Cadavers will then be examined for the presence or absence of Bti spores and delta-endotoxin crystals. The quantity of spores and crystalline toxin will be quantified using one or more of the following: bioassays with mosquito larvae, histological examination of tissues using phase-contrast and electron microscopy, and serological analysis.</p> <p>25. (U) (8410-8509) The principal success of this project is the confirmation of the hypothesis that Bti undergoes complete cycling in association with the larval cadavers of <u>Ae. aegypti</u>. The results also demonstrate that the observed toxicity of cadavers was the result of newly synthesized toxin and not the accumulation of toxin contained in the initial infective dose. The results confirm that the toxin produced <u>de novo</u> was crystalline endotoxin.</p> <p>Vorgetts, L. J. and Buescher, M. D. Effects of microencapsulation on the persistence of <u>Bacillus thuringiensis</u> (serotype H-14).</p> <p>Vorgetts, L. J. Factors influencing amplification of <u>Bacillus thuringiensis</u> (serotype H-14) endotoxin in <u>Aedes aegypti</u> larvae.</p> <p>Presentations by L. J. Vorgetts, 50th Annual Meeting of the American Mosquito Control Association, Atlantic City, NJ, March 1985.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 305995	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(IAR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61101A	3A161101A91C	LA	073 APC F193			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Microbial Interactions with Guanidine							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 13 Microbiology; 06 09 Hygiene & Sanitation							
13. START DATE 84 02	14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER			85	0.2	15		
c. TYPE	d. AMOUNT		86	0.0	0		
e. KIND OF AWARD			f. CUM/TOTAL				
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Mitchell, W R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2036				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Biodegradation; (U) Guanidine; (U) Munitions Pollutant; (U) Nitrogen Source							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Guanidine is a pollutant found in waste streams resulting from US Army propellant manufacture and its environmental fate is currently under study in the laboratory. The objective of this project is to elucidate the means by which environmental microorganisms utilize guanidine and to identify the organisms capable of using it as a nitrogen source for growth.</p> <p>24. (U) Microorganisms will be grown on medium containing glucose with guanidine present as a sole source of nitrogen. Species capable of utilizing the compound will be purified and identified. Products resulting from microbial interactions with the compound will be isolated and identified.</p> <p>25. (U) 8410 - 8509. Three organisms have been isolated which use guanidine as a nitrogen source for growth. Two are gram negative fermentative rods; the third has been identified as a <u>Pseudomonad</u>. The latter organisms can grow to high titer on the compound as a nitrogen source, mineralizes guanidine carbon, and is the system of choice for metabolic studies. Isotopic distribution following pulse labeling of the isolate with carbon-14 guanidine indicates that more than 90% of the guanidine used is converted to carbon dioxide and about 5% is incorporated into the bacterium. Incorporated label is found predominantly in the nucleic acid and protein fractions.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA0G5997	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3M161102BS10	AS	331 APC F251			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Vector Control Science Base							
12. SUBJECT AREAS 0603 Biology; 0612 Medical and hospital equipment							
13. START DATE 83 10	14. ESTIMATED COMPLETION DATE CONT	15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House				
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)			
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT	85	0.1	48			
e. KIND OF AWARD	f. CUM/TOTAL	86	1.2	76			
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7237				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Bunner, B L				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pest Management; (U) Integrated Pest Management; (U) Vector Control; (U) Methodology; (U) RAM I							
23. TECHNICAL OBJECTIVE 24 APPROACH 25 PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop and maintain a pest management science base that will (a) ensure the applied research program is current in new developments in pest management, and (b) develop new militarily unique approaches to integrated pest management. This project is a vital part of a comprehensive vector control program, ensuring a steady stream of new, innovative, and often novel approaches to effective control of arthropod vector populations.</p> <p>24. (U) Through use of in-house expertise and extensive interrelationships with other government agencies and the private sector, conduct basic research in the area of integrated pest management. The approach will be centered on militarily unique aspects of the program.</p> <p>25. (U) (8410-8509) Testing is continuing to determine the comparative effectiveness of diluted versus technical grade malathion for adult mosquito control by ground equipment. Bioassay methodologies involving sentinel mosquito cages are being examined using gas chromatography (GC) and the Army Insecticide Measuring System (AIMS).</p> <p>Boobar, L. R., Vorgetts, L. J., Anderson, L. M., and Nelson, J. H. 1985. An efficient method for transferring adult mosquitoes during field tests. Journal of the American Mosquito Control Association. (In Press)</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA OG 8688	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	61102A	3E161102BS04	AA	002 APC F202		
b. CONTRIBUTING						
c. COOPERATING	DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Basic Research in Aquatic Toxicology						
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology						
13. START DATE 81 10	14. ESTIMATED COMPLETION DATE 85 09	15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER			85	2.8	92	
c. TYPE	d. AMOUNT	86	0.0	0		
e. KIND OF AWARD	f. CUM/TOTAL					
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR van der Schalie, W H			
d. TELEPHONE NUMBER (include area code) (301) 663-7685			d. TELEPHONE NUMBER (include area code) (301) 663-7627			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Lab Animals; (U) Aquatic Toxicology; (U) Fish; (U) Histopathology; (U) <u>Daphnia magna</u> ; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
<p>23. (U) To improve the predictive capability of screening tests currently used to evaluate the impact of Army-relevant materials on aquatic organisms. This research is relevant to Army needs for compliance with discharge limitations.</p> <p>24. (U) The histopathologic response of fish to Army-relevant toxicants during early life stage tests will be compared to known chronic effects to see if the predictive ability of the early life stage test can be improved. Compounds to be tested include Dursban and 2,4-dinitrotoluene (2,4-DNT). The effects of similar amounts of 1,3,5-trinitrobenzene (TNB) applied in constant and fluctuating patterns on the aquatic invertebrate <u>Daphnia magna</u> will be evaluated to assess the influence of varying toxicant application patterns on toxicity. The use of fish for evaluating the carcinogenic potential of materials will be tested.</p> <p>25. (U) 8410 - 8509. Using histopathologic end points increased the predictive capability of the fish early life stage test with 2,4-dinitrotoluene (2,4-DNT) but not with Dursban. Ten acute toxicity studies with daphnids and TNB showed that a given amount of TNB is less toxic when applied in a pulsed application pattern than when given at a constant concentration. No evidence of tumors was found in fathead minnows exposed to 2,4-DNT, 2,6-DNT, or a mixture of the two DNT isomers. A more sensitive species, such as the medaka, should be used to evaluate whether fish can be used to evaluate the carcinogenic potential of Army-relevant materials. Increasing exposure and holding temperatures above the standard temperature (25°C) did not enhance tumor production in medaka exposed to diethylnitrosamine. This research will be continued in FY86 under a new work unit entitled Basic Research in Aquatic Toxicology.</p>						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 301054	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	003 APC F203			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Aquatic Toxicology Test Method Development							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 82 10		14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE		d. AMOUNT		85	0.2	7	
e. KIND OF AWARD		f. CUM/TOTAL		86	0.0	0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR van der Schalie, W H			
d. TELEPHONE NUMBER (include area code) (301) 663-7685				d. TELEPHONE NUMBER (include area code) (301) 663-7627			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Lab Animals; (U) Aquatic Toxicology; (U) Daphnia magna; (U) Chronic Toxicity; (U) Standard Methods; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To participate in a collaborative effort to develop a standardized static renewal chronic test with the aquatic invertebrate <u>Daphnia magna</u>. This test will be useful for the evaluation of the toxicity of Army-relevant materials to aquatic organisms. This research is relevant to Army needs for compliance with discharge limitations.</p> <p>24. (U) Simultaneous toxicity tests will be conducted in this Laboratory and several others so that the reproducibility of a standard test protocol can be evaluated. Four test materials will be used in each laboratory. In a first phase, this Laboratory helped to select an appropriate food and dilution water combination and to define any areas of the protocol requiring modification. In the second phase, 11 laboratories will conduct chronic tests with each test material. Data from this study will be used to evaluate the usefulness of the protocol as a standard method for evaluating the toxicity of materials to <u>Daphnia magna</u>.</p> <p>25. (U) 8410 - 8509. Tests with all four test compounds were successfully completed in the USAMBRDL aquatic toxicology laboratory. For all 11 laboratories, 42 of 45 chronic tests were completed successfully. Compared to previously-tested daphnid chronic test protocols, results from the protocol evaluated in this study were highly repeatable. This test should be a useful addition to the battery of tests presently used to evaluate the environmental hazard of Army-relevant materials.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 305522	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES: a. PRIMARY	PROGRAM ELEMENT 62720A	PROJECT NUMBER 3E162720A835	TASK AREA NUMBER AA	WORK UNIT NUMBER 121 APC F633		
b. CONTRIBUTING						
c. CONTRIBUTING	DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code) (U) Pollutant Adsorbent Systems						
12. SUBJECT AREAS 07 03 Organic Chemistry; 07 04 Physical Chemistry; 11 09 Plastics						
13. START DATE 84 02	14. ESTIMATED COMPLETION DATE 85 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT		18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER		85	0.2	11		
c. TYPE	d. AMOUNT	86	0.0	0		
e. KIND OF AWARD	f. CUM/TOTAL					
19. RESPONSIBLE DOD ORGANIZATION		20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory		a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010		b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E		c. NAME OF PRINCIPAL INVESTIGATOR Kulkarni, R K				
d. TELEPHONE NUMBER (include area code) 301-663-7685		d. TELEPHONE NUMBER (include area code) 301-663-2036				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L		f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
		g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Munitions; (U) Wastewater; (U) Adsorption; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
<p>23. (U) To study specific and selective adsorbents made from polymers based on silica gels, polyacrylates, or polystyrenes for the detection and removal of TNT, RDX, and HMX from water. This research is relevant to military compliance with environmental criteria and standards for munitions wastewater effluents.</p> <p>24. (U) Specific adsorbent properties of specially-prepared polymers will be tested. Polymers will be prepared for testing in two ways. First, polymerize selected monomers (either commercial or synthetic) in the presence of the desired adsorbents, crosslink the polymers, and remove the adsorbates by selective solvent extraction. The polymers will be dried and tested for selective adsorption. Secondly, the monomers containing the adsorbate residues will be polymerized in a suitable solvent, crosslinked and used for selective adsorption, after removal of adsorbate molecules by solvolysis.</p> <p>25. (U) 8410 - 8509. Silica gel polymers from aqueous phase and the organic polyacrylates from nonaqueous phase were expected to be specific for TNT, RDX, and HMX, respectively. The silica gels showed consistently increased adsorptivity for the substrates; however, the polyacrylates did not show any consistent specificity. A technical report is in preparation. New approaches to the preparation of specific adsorbents will be studied in FY86 under a new work unit entitled Novel Synthetic Polymers for Sorption and Removal of Hazardous Pollutants from Wasterwater at Military Installations.</p>						



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA OB 6188	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(IAR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA		123 APC F630		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Screening of Military-Relevant Chemicals for Toxicity to Aquatic Organisms							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 76 10		14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT		85		0.4	
e. KIND OF AWARD		f. CUM/TOTAL		86		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR van der Schalie, W H			
d. TELEPHONE NUMBER (include area code) (301) 663-7685				d. TELEPHONE NUMBER (include area code) (301) 663-7237			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Lab Animals; (U) Munitions; (U) Fish (U) Aquatic Toxicology; (U) Hazardous Wastes; (U) Pesticides; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To provide aquatic toxicity data required in conjunction with in-house and extramural research related to Army activities. These data will help assess the hazard to aquatic organisms of Army-relevant materials and aid in the pollution abatement process and compliance at Army facilities.</p> <p>24. (U) To conduct aquatic toxicity testing through comparative screening tests and through generation of toxicity data; to evaluate state-of-the-art toxicity testing methods to determine applicability to research requirements; to advance the state-of-the-art in toxicity testing methods where research requirements cannot be met with existing methods.</p> <p>25. (U) 8410 - 8509. Reports summarizing aquatic toxicity testing conducted with fish, aquatic invertebrates, and algae for nitroguanidine, photolyzed nitroguanidine, and guanidine nitrate were published. These data will be used to establish appropriate discharge standards for waste effluents resulting from the production of nitroguanidine at Sunflower Army Ammunition Plant. A report on the toxicity of mixtures of two nitroaromatic compounds formed during TNT production was finalized.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA306622	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 12 12	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62734A	3M162734A875	CA	221 APC F382		
b. CONTRIBUTING						
c. COORDINATING	DA LRRDAP, FY 86-01					
11. TITLE (Precede with Security Classification Code) (U) Chemical Hardening of Field Litters						
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment						
13. START DATE 84 09	14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER						
c. TYPE	d. AMOUNT		85	0.8	240	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.3	50	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Reams, W H			
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Warfare; (U) Field Medical Materiel; (U) Chemical Hardening; (U) Decontamination; (U) Chemical Agent Protection; (U) RAM V						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
<p>23. (U) Improve existing litter (NSN 6530-00-783-7905) or design a new litter that is not degraded by chemical warfare agents or decontaminating agents. These features are necessary for the litter to be used on a chemical warfare battlefield.</p> <p>24. (U) Work on this project was previously done under Agency Accession No. DAOG1513. Screening tests of various materials will be conducted to determine the best candidate material. The candidate material will be subjected to additional tests to quantify its resistance to chemical agents and decontaminating agents and to establish guidelines for use of litters made from this selected material.</p> <p>25. (U) (8412-8509) Screening tests of candidate materials by the Chemical Research and Development Center identified polyethylene as the best material to use for the cover and handles. Further testing will be done by Battelle Memorial Institute, Columbus Laboratories, through a contract with the US Army Medical Research Institute of Chemical Defense (USAMRICD), to quantify the agent resistance characteristics of polyethylene for this application. The effects of color dyes and fire retardant treatments on the material's agent resistance will be determined.</p>						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA307168	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 17	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62734A	3M162734A875	CB	222 APC F379		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY 86-01					
11. TITLE (Precede with Security Classification Code) (U) Chemical Warfare Agent, Protective Field Battle Dressing							
12. SUBJECT AREAS 1502 Chemical, biological and radiological warfare; 0611 Life support; 0612 Medical and hospital equipment							
13. START DATE 85 04		14. ESTIMATED COMPLETION DATE 89 12		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER							
c. TYPE		d. AMOUNT		85	0.1		17
e. KIND OF AWARD		f. CUM/TOTAL		86	0.5		104
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Malek, J W			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7277			
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available) Arnold, M F			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Warfare; (U) Field Medical Materiel; (U) Dressings; (U) Patient Protection; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) Develop a field battle dressing to protect wounds from the effects of exposure to chemical warfare agents.							
24. (U) Conduct market research to determine possible commercial sources. Prototypes will be obtained and evaluated for potential use based on established military requirements.							
25. (U) (8504-8509) An Operational and Organizational Plan has been submitted by the Academy of Health Sciences (AHS) to the Chief, US Army Chemical School, for concurrence. A Joint Working Group will be convened by AHS to prepare and approve a Joint Service Operational Requirement with the US Air Force and US Navy.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DAOG2702	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62734A	3M162734A875	CB	223 APC F354			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	JA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Technical Feasibility Testing (TFT) of Delivery Systems for Chemical Warfare Medicaments							
12. SUBJECT AREAS 1502 Chemical, biological and radiological warfare; 0612 Medical and hospital equipment; 0611 Life support							
13. START DATE 80 05	14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.1	35		
e. KIND OF AWARD	f. CUM/TOTAL		86	0.1	35		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Conway, W H				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7527				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Delivery Systems; (U) Injectors; (U) Injection Methods; (U) Automatic Injectors; (U) Chemical Warfare Antidotes;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) Field Medical Materiel; (U) Chemical Casualty; (U) RAM V							
23. (U) Evaluate any and all kinds of antidote delivery systems to determine the best method/appliance to contain chemical warfare medicaments.							
24. (U) Conduct market research to determine possible methods/appliances. Prototypes will be obtained and evaluated for potential use based on established military requirements.							
25. (U) (8410-8509) Test units were received during 4th Quarter FY 85, and environmental testing is under way. Field evaluation will be delayed until early FY 86.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG1894	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62734A	3M162734A875	CB	224 APC F353			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Technical Feasibility Testing of Foreign Medical Materiel for Use in a Contaminated Environment							
12. SUBJECT AREAS 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment							
13. START DATE 80 01	14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER			85	0.3		42	
c. TYPE	d. AMOUNT		86	0.3		42	
e. KIND OF AWARD			f. CUM/TOTAL				
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR George, D T				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical; (U) Biological; (U) Nuclear; (U) Field Equipment; (U) Medical Materiel; (U) Evaluation; (U) Casualty Management;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) Patient Management; (U) Treatment; (U) RAM V							
<p>23. (U) Evaluate foreign medical materiel/technology/doctrine for AMEDD adoption and use in contaminated field environments. Contaminated environments include nuclear, biological, and chemical warfare. Evaluation and adoption of selected foreign medical materiel/technology/doctrine can rapidly and effectively improve AMEDD's casualty management capabilities.</p> <p>24. (U) Development of and continual monitoring of information sources on foreign medical materiel/technology/doctrine for possible exploitation will be pursued. Selected foreign items of equipment will be procured and evaluated.</p> <p>25. (U) (8410-8509) Reports, equipment, and/or procedures from foreign sources are continually reviewed for potential US Army use. An evaluation of the French Parachutist Surgical Unit was performed, and selected items of equipment from that assemblage will be studied further. An Israeli Battalion Aid Station set was reviewed, but it requires professional medical evaluation. Also, a West German Decontamination System was procured but was determined to be incomplete and possibly an obsolete version. Additional information is being sought on this system.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG1513	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62734A	3M162734A875	CA	227 APC F357			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Chemical Hardening of Medical Field Chests							
12. SUBJECT AREAS 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment; 0617 Protective equipment							
13. START DATE 81 05	14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.5	150		
e. KIND OF AWARD	f. CUM/TOTAL		86	0.3	50		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Patzner, N H				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Warfare; (U) Field Medical Materiel; (U) Chemical Hardening; (U) Decontamination; (U) Chemical Agent Protection;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) RAM V							
<p>23. (U) Chemically harden existing and future military field medical materiel for resistance to contamination and decontamination agents.</p> <p>24. (U) Evaluate materials, methods, designs, and equipment for chemical agent resistance in coordination with the Chemical Research and Development Center, Edgewood, MD; advise Materiel Developer and procuring activities of the results and proper approach.</p> <p>25. (U) (8410-8509) A prototype chemically hardened gasket is being tested at Dugway Proving Ground (DPG) for resistance to chemical and decontaminating agents. Chests fitted with the new gasket and painted with the Department of Army approved chemical agent resistant coating will provide a near-term improvement to the chemical resistance characteristics of the existing field medical chest. Results from testing at DPG will also indicate whether additional efforts are required to improve handles and latches to further harden the chest.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 302678	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62734A	3M162734A875	AM	228 APC F375			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Adsorbents for the Recovery, Enrichment, and Transport of Chemical Warfare Agents Found in Water							
12. SUBJECT AREAS 15 02 Chemical, Biological, and Radiological Warfare; 07 02 Inorganic Chemistry							
13. START DATE 83 05	14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.1	6		
e. KIND OF AWARD	f. CUM/TOTAL		86	0.0	0		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Hoke, S H				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2036				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Shin, M				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Nerve Agents; (U) Adsorbents; (U) Reversed Phase; (U) Separation; (U) Analysis; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objective of this work is to determine the feasibility of using commercially available adsorption cartridges and adsorbents for isolating and concentrating levels of CW agents in water to levels detectable with enzyme test tickets. This has high military relevancy because proposed new drinking water levels for CW agents are below present detection technology.</p> <p>24. (U) Commercially available adsorption cartridges, packed with different adsorbents will be evaluated for their capacities to extract GA, GB, GD, and VX from water and to release these adsorbates into 1 to 2 mL of eluent. Efficiencies of recoveries and cholinesterase responses will be determined.</p> <p>25. (U) 8410 - 8509. Agents GD and GB have been successfully extracted from water at or below the present drinking water levels and detected by the enzyme test tickets. Agents VX and GA will be tested in FY86 under a new work unit entitled Biomedical Assessment of the Toxic Effects of Chemical Agents.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY						1. AGENCY ACCESSION DA 302680	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER				
a. PRIMARY	62734A	3MI62734A875	AM	230 APC F377				
b. CONTRIBUTING								
c. CONTRIBUTING	DA LRRDAP, FY 85-01							
11. TITLE (Precede with Security Classification Code) (U) Analytical Reference Standards of Hydrolysis Products of Chemical Warfare Agents								
12. SUBJECT AREAS 07 03 Organic Chemistry; 07 02 Inorganic Chemistry; 15 02 Chemical, Biological, and Radiological Warfare								
13. START DATE 83 05	14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE					
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORK YEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER								
c. TYPE	d. AMOUNT		85		0.1		5	
e. KIND OF AWARD	f. CUM/TOTAL		86		0.0		0	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION					
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory					
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010					
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Rosencrance, A B					
d. TELEPHONE NUMBER (include area code) (301) 663-7685			d. TELEPHONE NUMBER (include area code) (301) 663-2340					
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)					
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)					
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Warfare Agents; (U) Chemical Synthesis; (U) Elemental Analyses; (U) Reference Reagents; (U) Nerve Agents; (U) RAM V								
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)								
<p>23. (U) To produce and provide 5- to 10-g samples of highly pure, analyzed batches of the stable hydrolysis products of the chemical warfare agents GA, GB, GD, VX, Mustard, and Lewisite to researchers who need these as reference materials. The use of these materials will increase the reliability of Army inter- and intra-laboratory studies.</p> <p>24. (U) Literature searches will be used to identify the hydrolysis products and to outline routes of syntheses. If methods are not available, modifications or new procedures will be evaluated. Synthesis of the above described substances will then be performed.</p> <p>25. (U) 8410 - 8509. Custom synthesis of some of the phosphonic acids would not be cost effective, primarily because of the small quantities, the difficulty of the syntheses, or uncertainties about yield. Methods have been selected or developed for synthesis of isopropyl methyl, ethyl methyl, pinacolyl methyl, and methyl phosphonic acids, primary and secondary hydrolysis products of GA, GB, GD, and VX. These materials will be synthesized in-house, as required, under a new FY86 work unit entitled Biomedical Assessment of the Toxic Effects of Chemical Agents. The synthesis of penacolyl methyl phosphonic acid has been started and a literature search of the CARS data base has been completed.</p>								



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1 AGENCY ACCESSION DA 303912	2 DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&RIAR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62734A	3M162734A875	AM	241 APC F384			
b. CONTRIBUTING							
c. COOPERATING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Removal of Chemical Warfare Agents from Field Water Supplies by Reverse Osmosis: Development of Test Protocol and Efficacy Testing							
12. SUBJECT AREAS 06 09 Hygiene and Sanitation; 07 04 Physical Chemistry							
13. START DATE 84 03	14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER			85	0.1	3		
c. TYPE	d. AMOUNT		86	0.0	0		
e. KIND OF AWARD	f. CUM/TOTAL						
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Burrows, W D				
d. TELEPHONE NUMBER (include area code) (301) 663-7685			d. TELEPHONE NUMBER (include area code) (301) 663-7104				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Warfare Agents; (U) Reverse Osmosis; (U) Field Water Supplies; (U) Bench Tests; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objective of this research is to develop a simple, bench-scale procedure for testing the efficacy of reverse osmosis (RO) membranes for removal of chemical agents from water. The test procedure will be used to evaluate RO units in the Army inventory for protection of field water supplies. This research is highly relevant to military needs because of proposed use of ROWPU for production of potable water in the field.</p> <p>24. (U) A bench-scale RO apparatus will be tested with a variety of membranes and agent surrogates and under various operational parameters. Transmission of surrogate agent through the membrane will be compared with transmission of authentic agent through the same membrane, where such data are available. The best surrogate(s) will be incorporated into a test protocol.</p> <p>25. (U) 8410 - 8509. A 5 cm diameter flat sheet test stand has been set up and tested with sodium chloride solutions. A polyamide (but not cellulose acetate) membrane gave salt rejection of 97-98 percent at 800 psi. Surrogates will be selected and tested during FY86 under a new work unit entitled Biomedical Assessment of the Toxic Effects of Chemical Agents.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA303504	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62734A	3M162734A875	CB	242 APC F385			
b. CONTRIBUTING							
c. CONTINUING	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Resuscitator/Ventilator, Gas-Powered, Individual (GPV)							
12. SUBJECT AREAS 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment; 0611 Life support							
13. START DATE 84 03	14. ESTIMATED COMPLETION DATE 88 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.1		28	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.5		94	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Malek, J W				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7277				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Resuscitator; (U) Ventilator; (U) Chemical Warfare Casualty; (U) Field; (U) Medical Materiel; (U) Ventilation; (U) Breathing;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) RAM V							
<p>23. (U) Develop a gas-powered resuscitator/ventilator for resuscitating chemical warfare casualties that would be operable by field medical personnel and would reduce continuous manual operation requirements.</p> <p>24. (U) Using the data and models developed from a previous joint US Air Force/US Army Medical Research and Development Command contract, test and evaluate initial design prototypes from that program to determine compliance with characteristics being established by the Combat Developer.</p> <p>25. (U) (8410-8509) An Operational and Organizational Plan has been prepared by the Academy of Health Sciences (AHS) and submitted for review. Comments were prepared and forwarded for consideration. A Joint Working Group is scheduled for 1st Quarter FY 86 to prepare a Joint Service Operational Requirement with the US Air Force and the AHS.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1 AGENCY ACCESSION DAOG8679	2 DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8 DISB'N INSTR'N BT	9 LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62770A	3M162770A870	BB		261 APC F901		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LHRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Vector Control Methods, Material, Equipment							
12. SUBJECT AREAS 0603 Biology; 0612 Medical and hospital equipment							
13. START DATE 81 10		14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER				b. FUNDS (In thousands)			
c. TYPE		d. AMOUNT		85		0.4	
e. KIND OF AWARD		f. CUM/TOTAL		86		1.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7237			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				e. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Vector Control; (U) Equipment; (U) Methodology; (U) Surveillance; (U) RAM I							
23. TECHNICAL OBJECTIVE 24 APPROACH 25 PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop threat projections, technological forecasts, and interagency planning to determine operational capabilities, doctrine, organization, and potential systems to meet Army vector control needs.</p> <p>24. (U) Investigate and analyze pertinent studies on vector control systems and develop and evaluate experimental and commercial hardware and control formulations to develop strategies for control of militarily important vectors.</p> <p>25. (U) (8410-8509) The Multicapability, Helicopter Slung, Pesticide Dispersal Unit, was used in the first recorded effort to suppress ticks by aerial application. The test was conducted at Fort A. P. Hill, VA, with good results (greater than 50 percent reduction). Coordination for testing ultra-low volume pesticide penetration of double canopy jungle during FY 86 is proceeding.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DAOB6244	85 09 30	DD-DR&E(A) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A WORK UNIT	
84 10 01	K. COMPLETION	U	U		BT		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62770A	3M162770A870	BB	262 APC F902			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code)							
(U) Integrated Pest Management - Black Flies							
12. SUBJECT AREAS							
0606 Environmental biology; 0603 Biology							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
78 10		85 09		DA		C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER							
c. TYPE		d. AMOUNT		85		0.2	
				86		0.0	
e. KIND OF AWARD		f. CUM/TOTAL				14	
						0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010				Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
Pedersen, C E				Boobar, L R			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-7685				301-663-7237			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)							
(U) Integrated Pest Management (IPM); (U) Biological Control; (U) Black Flies; (U) Disease Vector Control; (U) RAM I							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop methods of long-term suppression of immature stages of black flies and short-term suppression of adults without adverse effect on the environment. Currently, black flies seasonally restrict use of vast military training areas at several CONUS installations. Overseas, they are the primary vector of onchocerciasis or river blindness, a disease of military importance in parts of Africa and Central and South America. Effective vector control strategies will permit increased military training at the affected installations and will reduce the potential threat of casualties due to onchocerciasis.</p> <p>24. (U) Growth and development regulating hormones or their synthetic chemical analogues will be tested in the laboratory and field aquatic habitat. Formulations designed to attach to specific substrates and with release slowly to provide long lasting control will be evaluated. Attention will also be directed to the use of biological control agents including pathogenic bacteria and fungi. Improvement of standardized methods for making evaluations of such agents will be emphasized because present methodology does not provide results which can be utilized in interlaboratory comparisons. The use of diluents to improve the activity of adulticides will be studied as a possible approach for suppression of adult black flies.</p> <p>25. (U) (8410-8509) A request for termination of the Letter of Agreement (LOA) has been initiated. All current and planned future developmental efforts overlap other program areas, therefore eliminating the need for a separate LOA.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DAOA6296	85 10 01	DD-DR&E(AR) 636	
3. DATE PREV SUMMARY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A WORK UNIT	
84 10 01	D. CHANGE	U	U		BT		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62770A	3M162770A870	BB		264 APC F904		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code)							
(U) Technical Feasibility Testing (TFT) of Vector Control Equipment							
12. SUBJECT AREAS							
0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
75 03		CONT		DA		C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT		85		0.3	
e. KIND OF AWARD		f. CUM/TOTAL		86		0.6	
						20	
						40	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010				Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
Pedersen, C E				Boobar, L R			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-7685				301-663-7237			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				Sardelis, M R			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)							
(U) Insect Control; (U) Pesticide Dispersal; (U) Engineer Tests; (U) Ultra-Low Volume (ULV); (U) Skid Mounted Sprayer; (U) RAM I							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Determine the durability of commercially available ultra-low volume (ULV) and powered pesticide dispersal equipment by comparative type engineering tests. Units will be used by military medical and engineering personnel to control mosquitoes and other insect pests. Results will provide user agencies with comparative durability and reliability data which can be used to insure purchase of the most effective equipment available.</p> <p>24. (U) Determine the operational capabilities of skid-mounted and special-purpose ULV Pesticide dispersal equipment by quantitative and qualitative methods. Measurable quantitative parameters include particle size determination and maintenance of desired pressure and flow rate. General engineering design observations will include corrosive effect of pesticide used during tests; verification of manufacturers' claims of performance specifications; general durability definitions as applied to mean time between breakdown and maintenance time; gas and oil consumption; and definition of high mortality repair parts.</p> <p>25. (U) (8410-8509) Reliability testing of the Micro-Gen G-88 and Whipermist aerosol generators is in progress. Plans have been finalized to test a TIFA aerosol generator and a LECO hand-held aerosol generator during FY 86.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOB6058	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62770A	3M162770A870	BB		265 APC F905		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Pesticide Dispersal Evaluation Set							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE 75 04		14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT		85		0.2	
e. KIND OF AWARD		f. CUM/TOTAL		86		1.2	
						11	
						90	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7237			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) Bunner, B L			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pesticide Dispersal; (U) Droplet Size; (U) Hot Wire Technology; (U) Insect Control; (U) EPA Requirements; (U) RAM I							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop a pesticide field evaluation set capable of measuring ultra-low volume (ULV) droplet size and total pesticide amounts applied by military dispersal equipment utilized in insect control operations.</p> <p>24. (U) Newly developed technology involving a "hot wire" probe as a serving element for generating counts and discriminating between droplets of various sizes will be interfaced with accessories to increase the equipment's field measurement versatility.</p> <p>25. (U) (8410-8509) The droplet measuring device has been completed, and field hardening is under way through increasing the amount of printed circuitry and improving packaging. The unit has been formally named "Army Insecticide Measuring System (AIMS)." A field hardened device is expected for testing by December 1985.</p> <p>Mahler, D. S. and Magnus, D. E. 1984. Hot-wire technique for droplet measurements. Pages 153-165 in J. M. Tishkoff, R. D. Ingelbo, and J. B. Kennedy, eds. Liquid particle size measurement techniques, ASTM STP 848. American Society for Testing and Materials.</p> <p>Mahler, D. S. 1985. Measurement of droplet size using hot-wire instrumentation. Proceedings, 72nd Annual Meeting, New Jersey Mosquito Control Association, Inc. (In Press)</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG0649	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62770A	3M162770A870	BB	266 APC F906			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Integrated Pest Management - Mosquitoes							
12. SUBJECT AREAS 0606 Environmental biology; 0603 Biology							
13. START DATE 79 10	14. ESTIMATED COMPLETION DATE 86 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House			
17. CONTRACT/GRANT		18. RESOURCES ESTIMATE					
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT	85		3.7	215		
e. KIND OF AWARD	f. CUM/TOTAL	86		2.4	120		
19. RESPONSIBLE DOD ORGANIZATION		20. PERFORMING ORGANIZATION					
a. NAME US Army Medical Bioengineering Research & Development Laboratory		a. NAME US Army Medical Bioengineering Research & Development Laboratory					
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010		b. ADDRESS Fort Detrick Frederick, MD 21701-5010					
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E		c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R					
d. TELEPHONE NUMBER (include area code) 301-663-7685		d. TELEPHONE NUMBER (include area code) 301-663-7237					
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H		f. NAME OF ASSOCIATE INVESTIGATOR (if available) Bunner, B L g. NAME OF ASSOCIATE INVESTIGATOR (if available)					
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Integrated Pest Management (IPM); (U) Biological Control; (U) Mosquitoes; (U) Disease Vector Control; (U) RAM I							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop methods for mosquito control that integrate physical, chemical, and biological control methods so as to maintain effective control economically without undue damage to the environment. Provide baseline laboratory and field data on the efficacy of various insecticides for control of mosquito larvae from which field application rates and methods will be developed for use by Army preventive medicine units.</p> <p>24. (U) Define mosquito problems at a US Army installation using previously accumulated data and on-site observations. Propose strategies for control of the problems which integrate physical, chemical, and biological methods. Proposed strategies will be implemented on-site to test the integrated pest management concept as it applies to mosquitoes.</p> <p>25. (U) (8410-8509) Testing and evaluation of a lightweight, gravity fed, battery operated, ultrasonic aerosol nozzle for ultra-low volume (ULV) pesticide dispersal are being conducted. A joint Army/Air Force aerial application field test of two formulations of an oil-based biorational larvicide is in progress. An aspirator has been developed to improve the efficiency of the Army Insecticide Measuring System (AIMS) under conditions such as ULV aerosol spraying where the droplets do not have enough velocity to impinge on the sensor wire. The aspirator has been tested under ground ULV aerosol dispersal conditions in a settling chamber and will be tested under aerial dispersal conditions during the Army/Air Force field test. A select group of entomologists will be convened to discuss and recommend future Integrated Pest Management (IPM) programs.</p> <p>Vorgetts, L. J. 1985. Factors influencing amplification of <u>Bacillus thuringiensis</u> (serotype H-14) endotoxin in <u>Aedes aegypti</u> larvae. <u>Proceedings, 72nd Annual Meeting, New Jersey Mosquito Control Association.</u> (In Press)</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DA303165	85 10 01	DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT	
84 10 01	D. CHANGE	U	U		BT		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62770A	3M162770A870	BB		267 APC F907		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code)							
(U) Delousing Outfit							
12. SUBJECT AREAS							
0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
83 10		88 06		DA		C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER							
c. TYPE		d. AMOUNT		85		0.3	
				86		1.5	
e. KIND OF AWARD		f. CUM/TOTAL				22	
						120	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010				Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
Pedersen, C E				Anderson, L M			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-7685				301-663-7237			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable				Patzer, N H			
MILITARY/CIVILIAN APPLICATION: L				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)							
(U) Delouser; (U) Lice; (U) Insecticide Dispersal Equipment; (U) RAM I							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop a delousing outfit that is capable of accurately dispensing insecticides used for control of lice. Equipment will be used by military medical and quartermaster personnel for mass delousing operations of both military and civilian personnel.</p> <p>24. (U) Using standard military and commercial components, develop a delousing outfit that is lighter, less bulky, and possesses a more accurate dispersal system than the existing delousing outfit.</p> <p>25. (U) (8410-8509) Based on discussions with The Surgeon General's Working Group on Pesticides and Pest Control Equipment, a six-gun delousing outfit will be designed. The recently procured guns will be redesigned concurrently with the mainframe development to produce a state-of-the-art delousing outfit.</p>							



<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DAOG9204	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62772A	3S162772A874	BA	227 APC F732		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code) (U) Digital Radiography							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0605 Clinical medicine							
13. START DATE 81 10		14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE		d. AMOUNT		85	0.3	47	
e. KIND OF AWARD		f. CUM/TOTAL		86	0.4	32	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Salisbury, L L			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7527			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) X-Ray System; (U) Digital Radiography; (U) Imaging, Medical; (U) Teleradiography; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop a digital radiographic/fluoroscopic system for field use. The elimination of film, film processor, and chemicals will do much to minimize the logistic burden associated with the use of conventional X-ray systems in a military medical environment.</p> <p>24. (U) Using commercial, modified commercial, and in-house developed subsystems, develop a detector, digital processor, display, and recording system for the acquisition, display, recording, and transmission of radiographic information.</p> <p>25. (U) (8410-8509) Evaluation of the prototype detector with a 1-inch area has been completed. Because of rapidly changing technology, a Request for Proposal is being prepared to permit other contractors with alternative technologies to be considered.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 302675	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY H. TERMINATION U	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62777A	3E162777A878	CA		241 APC F966		
b. CONTRIBUTING	61102A	3M161102BS12	AE		032		
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Microbial Degradation and Yeast Bioassay of Trichothecene Mycotoxins							
12. SUBJECT AREAS 06 09 Hygiene and Sanitation; 06 13 Microbiology; 15 02 Chemical, Biological, and Radiological Warfare							
13. START DATE 83 05		14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER				85		0.6	
c. TYPE		d. AMOUNT		86		0.0	
e. KIND OF AWARD		f. CUM/TOTAL				48 0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Taylor, G W			
d. TELEPHONE NUMBER (include area code) (301) 663-7685				d. TELEPHONE NUMBER (include area code) (301) 663-2036			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Trichothecene; (U) Yeast Bioassay; (U) Toxicants; (U) Cryptococcus; (U) RAM III; (U) RAM I							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To determine if a simple, inexpensive, and rapid bioassay using yeasts can be developed for detecting and quantifying trichothecene mycotoxins in Army field water supplies. To explore the possible use of this bioassay as a rapid screening device for detecting other toxicants in environmental waters.</p> <p>24. (U) A disc agar diffusion assay for the detection and quantification of trichothecene mycotoxins has been developed using the yeast <u>Cryptococcus luteolus</u>. It is unique in that the support agars contain tetrazolium salts. It will be further evaluated as a rapid screening device for other compounds of EPA and Army interests listed by EPA as Priority Pollutants.</p> <p>25. (U) 8410 - 8509. The yeast bioassay, using toxicant impregnated discs, was found to be sensitive to all types of trichothecene mycotoxins tested. These results compared with the LD50 (IP) in mice for these mycotoxins. Other pollutants, including dinitroaniline, dinitrobenzene, and dinitrotoluene, heavy metals and cyclodiene pesticides, were tested and the Lowest Observed Effect Level (LOEL) was established for each chemical. The mycotoxin results were presented at the 1985 annual meeting of the American Society of Microbiology. This work is terminated because the test is not specific and does not improve sensitivity of detection over other available tests.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOB6248	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	63732A	3S463732D836	AC		001 APC F319		
b. CONTRIBUTING	62772A	3S162772A874	BA		228		
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Family of Medical Equipment Protective Containers							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0617 Protective equipment							
13. START DATE 78 12	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER			85	0.1		7	
c. TYPE	d. AMOUNT		86	0.1		13	
e. KIND OF AWARD			f. CUM/TOTAL				
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Reams, W H				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Container; (U) Protective Container; (U) Field Chest; (U) Medical Chest; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Design a family of strong, lightweight containers for fragile medical equipment that is presently authorized to field medical units. This containerization program will assure that equipment is received in good working order and will also reduce packaging time on the battlefield.</p> <p>24. (U) Identify physical characteristics of existing items to be protected. Determine similarities and then design a container or containers with various inserts to protect the items during handling, shipping, and storage.</p> <p>25. (U) (8410-8509) The US Army Medical Materiel Development Activity (USAMMDA) had previously requested that the US Army Medical Bioengineering Research and Development Laboratory expend no further effort on this project until an In-Process Review (IPR) could be convened. Information has been provided to USAMMDA for use in preparing an IPR packet.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DAOB6223	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR4E(AR) 636	
3. DATE PREV SUM'RY 85 04 10	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	63732A	3S463732D836	AA		005 APC F305		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LHRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Controlled-Release, Environmentally Degradable, Pesticide Formulations							
12. SUBJECT AREAS 0606 Environmental biology; 0603 Biology							
13. START DATE 77 10	14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85		0.3	58	
e. KIND OF AWARD	f. CUM/TOTAL		86		0.8	91	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7237				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Bunner, B L				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pesticide Formulations; (U) Controlled-Release; (U) Pest Management; (U) Environmental Compatibility; (U) Vector Control;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) RAM I; (U) RAM II							
<p>23. (U) Identify and evaluate environmentally compatible controlled-release pesticide formulations of military relevance for use in support of tactical operations and fixed military installation pest management/vector control programs. These results will provide the military with a new series of effective pesticides that are registered for medically important arthropods.</p> <p>24. (U) Utilizing commercially prepared controlled-release pesticide formulations and carriers potentially suitable for military use, quantify release rates and degradation rates in the laboratory. Those formulations found to be best in laboratory tests will be evaluated in field tests to verify laboratory results under natural environmental conditions. Determinations both in the laboratory and in the field will be biological effectiveness, environmental compatibility, cost effectiveness, and compatibility with current standard pesticide dispersal equipment.</p> <p>25. (U) (8504-8509) Formulation evaluations of second-generation, microencapsulated <u>Bacillus thuringiensis</u> (Serotype 14) were completed. Persistence was not increased substantially over first-generation formulations. Commercial formulations will be examined for use in Military Operations Urban Terrain (MOUT).</p> <p>Vorgetts, L. J. and Buescher, M. D. 1985. Effects of microencapsulation on the persistence of <u>Bacillus thuringiensis</u> (serotype H-14). Proceedings, 72nd Annual Meeting, New Jersey Mosquito Control Association, Inc. (In Press)</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DAOG9210	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(IAR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		63732A	3S463732D836	BB	010 APC F316		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code) (U) On-Site Medical Oxygen Generating and Distribution System							
12. SUBJECT AREAS 0602 Bioengineering; 0611 Life support; 0612 Medical and hospital equipment							
13. START DATE 82 01		14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT		85		0.6	
e. KIND OF AWARD		f. CUM/TOTAL		86		0.4	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Thayer, C R			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-2144			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Medical Gases; (U) Field Gas Generation; (U) Life Support; (U) Hospital Equipment; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop the concept and requirements for generation of medical gases (principally oxygen) in the field, thus negating the need for moving large numbers of high pressure gas bottles through the supply system to forward areas.</p> <p>24. (U) Commence development work after contract has been awarded.</p> <p>25. (U) (8410-8509) Three contracts were awarded on 6 March 1985 for production of prototypes for the demonstration and validation phase. Preliminary design of the system is nearly complete.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG9206	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	63732A	3S463732D836	BB		011 APC F317		
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Resuscitation Fluids Production and Reconstitution System (REFLUPS)							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0605 Clinical medicine							
13. START DATE 81 10	14. ESTIMATED COMPLETION DATE CONT		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85		0.2	22	
e. KIND OF AWARD	f. CUM/TOTAL		86		0.6	147	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Conway, W H				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7527				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pyrogen-free Water; (U) Injectables; (U) Reconstitution; (U) Clinical Medicine; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Supply pyrogen-free water for use in injectable, intravenous, and other field medical applications. The logistics of military use preclude the shipment of prepackaged water for injection due to size and weight.</p> <p>24. (U) Investigate various commercial and laboratory methods for the production of sterile pyrogen-free water. Methods of coupling the output of the system to suitable containers for distribution will be examined.</p> <p>25. (U) (8410-8509) Two potential contractors have been selected from a field of four in response to a Request for Proposal. Final selection will be made and a contract let early in 1st Quarter FY 86.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG1512	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	63751A	3M463751D993	ED	081 APC F454		
b. CONTRIBUTING	62734A	3M162734A875	CB	226		
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code) (U) Resuscitation Device, Individual, Chemical						
12. SUBJECT AREAS 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment; 0611 Life support						
13. START DATE 81 05	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER						
c. TYPE	d. AMOUNT		85	0.4	31	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.3	64	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Malek, J W			
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7277			
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Resuscitation; (U) Chemical Warfare Casualty; (U) Field; (U) Medical Materiel; (U) Ventilation; (U) Breathing; (U) RAM V						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) Develop a lightweight, compact, manual device to resuscitate chemical warfare casualties, which can be operated by an individual soldier.						
24. (U) Design an approach and contract with industry for fabrication of a device; test and evaluate prototypes.						
25. (U) (8410-8509) The contract with Mine Safety Appliances Research Corporation, Evans City, PA, was concluded with delivery of 100 units that met fabrication requirements. These models successfully completed Development Testing I. Concept Evaluation Program testing will be conducted by the Army Medical Department Board during 1st Quarter FY 86.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG9318	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		64717A	3S464717D832	AL	001 APC F570		
b. CONTRIBUTING		63732A	3S463732D836	BB	007		
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code) (U) Steam Vacuum Pulse Sterilizer (SVP) System							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0613 Microbiology							
13. START DATE 81 12		14. ESTIMATED COMPLETION DATE 88 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT GRANT NUMBER				85	1.3	81	
c. TYPE		d. AMOUNT		86	1.6	117	
e. KIND OF AWARD		f. CUM/TOTAL					
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Arnold, M F			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-2144			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Field Sterilizers; (U) Power Module; (U) Steam Sterilization; (U) Microbiology; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) Conduct an engineering evaluation of the steam vacuum pulse sterilizer system developed for field Army medical use.							
24. (U) Evaluate OT II report, make necessary modifications, and prepare Technical Data Package prior to type classification action.							
25. (U) (8410-8509) In-Process Review decisions in 2nd Quarter FY 85 retained this task in full-scale development phase and called for a review of converting relay control logic to microprocessor technology and for Operational Test IIa. Review of the electronics is under way. A Request for Proposal is scheduled for 1st Quarter FY 86 to procure six additional sterilizers to be used for Operational Test IIa.							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG9320	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	AK	002 APC F571			
b. CONTRIBUTING	63732A	3S463732D836	BB	008			
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Ethylene Oxide Sterilization (EOS) System							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0613 Microbiology							
13. START DATE 81 12	14. ESTIMATED COMPLETION DATE 88 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House			
17. CONTRACT GRANT		18. RESOURCES ESTIMATE					
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)			
b. CONTRACT GRANT NUMBER		85	1.0	66			
c. TYPE	d. AMOUNT	86	1.4	100			
e. KIND OF AWARD	f. CUM/TOTAL						
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Arnold, M F				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Gaseous Sterilization; (U) Aeration; (U) Residues; (U) Toxic; (U) Leak Detector; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) Conduct an engineering evaluation of the ethylene oxide sterilization system developed for field Army medical use.							
24. (U) Evaluate OT II report, make necessary modifications, and prepare Technical Data Package prior to type classification.							
25. (U) (8410-8509) An In-Process Review decision in 2nd Quarter FY 85 retained the task in full-scale development phase. A Request for Proposal is scheduled for 1st Quarter FY 86 for the procurement of six additional sterilizers to be used for Operational Testing IIa.							
Prensky, W. C. An ethylene oxide sterilizer and aerator for the field army: Conformance to OSHA limits. Presented by W. C. Prensky, AAMI Conference on New Public Policies & Medical Technology, Arlington, VA, December 1984.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG0677	2. DATE OF SUMMARY 85 03 06	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	64717A	3S464717D832	AA		003 APC F583		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Sprayer, Powered, ULV, Portable							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE 79 10		14. ESTIMATED COMPLETION DATE 85 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER				85	0.0	0	
c. TYPE		d. AMOUNT		86	0.0	0	
e. KIND OF AWARD		f. CUM/TOTAL					
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Nelson, J H			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7237			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY, CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Ultra-Low Volume (ULV) Dispersal; (U) Arthropod Control; (U) Lightweight; (U) Durable; (U) Disease Vectors; (U) Portable;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) RAM I; (U) RAM II							
<p>23. (U) Identify a commercially available, lightweight, durable, portable unit capable of dispersing ultra-low volume (ULV) pesticide formulations. This unit will be used by preventive medicine personnel in combat zones and CONUS for controlling disease vectors and pest arthropods. This project involves engineering and operational evaluation of insecticide dispersal equipment for incorporation into field medical units.</p> <p>24. (U) Review commercially available portable ULV sprayers. Suitable units will be field evaluated. After entomological feasibility has been established, modifications, if necessary, will be made and formal testing coordinated with responsible agencies.</p> <p>25. (U) (8410-8503) The sprayer was type classified during 3Q83 and a transition checklist was submitted July 1984. This Laboratory received the certificate of transition from the US Army Troop Support Command in Dec 84.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOA6282	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	BB	004 APC F555			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Liner, Heated, Patient Holding and Evacuation System							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0607 Escape, rescue, and survival; 0617 Protective equipment							
13. START DATE 73 04	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT GRANT NUMBER							
c. TYPE	d. AMOUNT		85	1.3		145	
e. KIND OF AWARD	f. CUM/TOTAL		86	2.6		175	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Rhodes, C T				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Evacuation Bag; (U) Arctic Medicine; (U) Cold Climate Medical Materiel; (U) Patient Transportation; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop a field patient holding and evacuation system capable of maintaining casualties at desired, controlled temperatures in extreme cold climates for prolonged periods. The current field means of protecting injured/sick military personnel in a cold environment from additional complications resulting from exposure to the cold is inadequate.</p> <p>24. (U) Design and fabricate developmental prototypes based upon previous engineering effort. Existing state-of-the-art materiel will be used. The major technical barrier is to maintain patient temperature for the required length of time and to be lightweight.</p> <p>25. (U) (8410-8509) Initial tests of a Norwegian heater system are promising. The system is charcoal fueled and uses a battery powered fan to circulate warm air through a mattress and/or auxiliary tube assembly. Additional tests are planned at the US Army Research Institute of Environmental Medicine (USARIEM) using an instrumented copper mannequin. Changes to the current evacuation bag will also be recommended to improve its insulative quality. A commercial bag is also being evaluated for possible recommendation as a future replacement for the current bag.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG0652	2. DATE OF SUMMARY 85 05 22	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY H. TERMINATION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	64717A	3S464717D832	AF		005 APC F574		
b. CONTRIBUTING	62772A	3S162772A874	BA		221		
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Refrigerator, Medical, Field							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0617 Protective equipment							
13. START DATE 79 10		14. ESTIMATED COMPLETION DATE 85 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER				b. FUNDS (In thousands)			
c. TYPE		d. AMOUNT		85		0.1	
e. KIND OF AWARD		f. CUM/TOTAL		86		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR O'Connor, R J			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7527			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available) Conway, W H			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Biological Refrigerator; (U) Medical Refrigerator; (U) Biological Storage; (U) Blood Storage; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Identify a replacement item for the biological refrigerator that is currently in the military inventory (NSN 4110-00-707-2550) but is no longer supportable.</p> <p>24. (U) Locate a suitable commercially produced item that will satisfy requirements or that can be made to do so with minor modification. A new development effort will be undertaken if a suitable item is unavailable.</p> <p>25. (U) (8410-8505) Potential litigation by a vendor of refrigeration equipment has forced postponement (cancellation) of the initiation of a development contract. Inability to secure a satisfactory commercial unit has forced termination of this work unit.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DAOG5856	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	AM	006 APC F580			
b. CONTRIBUTING	62772A	3S162772A874	BA	236			
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Carrier, Litter, Wheeled							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0607 Escape, rescue, and survival							
13. START DATE 80 09	14. ESTIMATED COMPLETION DATE 85 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER			85	0.8		50	
c. TYPE	d. AMOUNT		86	0.0		0	
e. KIND OF AWARD			f. CUM/TOTAL				
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Thayer, C R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-2144				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Conway, W H				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Mobile Litter; (U) Litter Carrier; (U) Wheeled Litter; (U) Standard Army Litter; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop a device that enables a standard Army litter to be converted into a wheeled "Gurney" type of patient conveyance that can be moved over field terrain by one or, at most, two litter bearers. The purpose is to reduce the number of personnel required in field hospitals to move patients and to facilitate the use of female soldiers in the role of litter bearer.</p> <p>24. (U) Procure and evaluate specimens of foreign equipment that address this need and are known to exist. Failing that, a new development effort will be undertaken.</p> <p>25. (U) (8410-8509) An In-Process Review held in December 1984 selected the US Army Medical Bioengineering Research and Development Laboratory's version for type classification. The Technical Data Package was completed and transitioned to the US Army Medical Materiel Development Activity (USAMMDA) during 3rd Quarter FY 85. A Production and Deployment contract will be awarded by USAMMDA.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOB6250	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	AE	007 APC F572			
b. CONTRIBUTING	63732A	3S463732D836	BA	012			
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) High Capacity Radiographic System for Field Use							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment							
13. START DATE 79 02		14. ESTIMATED COMPLETION DATE 87 07		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT		85		0.8	
e. KIND OF AWARD		f. CUM/TOTAL		86		0.6	
						58	
						37	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Conway, W H			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7527			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available) Salisbury, L L			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) X-Ray; (U) Field Medicine; (U) Field Equipment; (U) Radiology; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Identify and evaluate a replacement field X-ray system for the current military standard (100 mA and 200 mA) system which is inadequate in reliability, availability, and maintainability.</p> <p>24. (U) Search existing commercial sources for functional components (X-ray source, table, power supplies, film processors) that can be adopted. If none are available, modify, design, or contract for design of new devices.</p> <p>25. (U) (8410-8509) Engineering models have been built and tested by the contractor. Prototype design has begun. Delivery of prototypes for operational testing is scheduled for July 1986.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305615	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	BA	043 APC F575			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Pesticide Dispersal Unit, Multicapability, Helicopter Slung							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE 83 10	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.8		26	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.4		43	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7237				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Sardelis, M R				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Helicopter Rig; (U) Aerial Application; (U) Mosquito Control; (U) Liquid Dispersal; (U) Solid Dispersal; (U) Multicapability							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) Dispersal; (U) RAM I; (U) RAM II							
<p>23. (U) Identify a suitable commercial, helicopter slung, dispersal unit for applying both liquid and solid formulations of insecticides, which would (a) be capable of dispensing both liquid and solid insecticides when slung beneath a helicopter, (b) require no modification of the aircraft, and (c) be capable of applying adequate swath widths and deposition rates for controlling disease vector in combat situations or CONUS.</p> <p>24. (U) A Simplex unit has been selected as the most suitable unit for field feasibility testing. Modifications will be made prior to further operational testing. The unit has been used successfully in actual mosquito control operations.</p> <p>25. (U) (8410-8509) The Simplex unit was used in the first recorded control effort to suppress ticks by aerial application. The test was conducted at Fort A. P. Hill, VA, with a greater than 50 percent reduction in the tick population. The unit will be recommended for type classification.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG0701	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(R) 636	
3. DATE PREV SUM'RY 85 05 20	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	AA	044 APC F581			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Trap, Mosquito, Light, Collapsible							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE 79 10	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS		b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT		85	0.9		33	
e. KIND OF AWARD	f. CUM/TOTAL		86	0.6		66	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Bioengineering Research & Development Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Fort Detrick Frederick, MD 21701-5010				
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E			c. NAME OF PRINCIPAL INVESTIGATOR Boobar, L R				
d. TELEPHONE NUMBER (include area code) 301-663-7685			d. TELEPHONE NUMBER (include area code) 301-663-7237				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L			f. NAME OF ASSOCIATE INVESTIGATOR (if available) Sardelis, M R				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pest Mosquitoes; (U) Mosquito Surveys; (U) Population Studies; (U) RAM I; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop a collapsible mosquito light trap which is powered solely from AC sources. The trap may be used with 110 volt outlets or with portable gasoline generators for disease vector and pest mosquito surveys. This will replace the standard mosquito light trap (NSN 3740-00-607-0337, LIN X24251) which is noncollapsible and approaching obsolescence.</p> <p>24. (U) Design and fabricate a suitable collapsible, AC powered, mosquito light trap and conduct field evaluations in various habitats.</p> <p>25. (U) (8505-8509) A subject matter expert panel convened during 3rd Quarter FY 85 to advise on the technical design of future iterations. A second prototype incorporating suggestions of the panel has been completed. Field testing is ongoing in Panama and South Carolina.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOB6193	2. DATE OF SUMMARY 85 03 06	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	AA	046 APC F576			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Pesticide Dispersal Unit, Portable, Backpack							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE 76 10	14. ESTIMATED COMPLETION DATE 85 03	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD C. In-House			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	EXPIRATION	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER							
c. TYPE	d. AMOUNT	85		0.1	6		
e. KIND OF AWARD	f. CUM/TOTAL	86		0.0	0		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Medical Bioengineering Research & Development Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Fort Detrick Frederick, MD 21701-5010			
c. NAME OF RESPONSIBLE INDIVIDUAL Pedersen, C E				c. NAME OF PRINCIPAL INVESTIGATOR Nelson, J H			
d. TELEPHONE NUMBER (include area code) 301-663-7685				d. TELEPHONE NUMBER (include area code) 301-663-7237			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY, CIVILIAN APPLICATION. L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEY WORDS (Precede EACH with Security Classification Code) (U) Backpack; (U) Solid/Liquid Dispersal; (U) Arthropod Control; (U) Lightweight; (U) Durable; (U) Disease Vectors;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) Portable; (U) RAM I; (U) RAM II							
<p>23. (U) Identify a commercially available, lightweight, durable, backpack unit capable of dispersing solid or liquid pesticide formulations. This unit would be used by preventive medicine personnel in combat zones and CONUS for controlling disease vectors and pest arthropods.</p> <p>24. (U) Review commercially available backpack units. Suitable units will be evaluated. After operational feasibility has been determined, a suitable item of equipment will be selected for off-the-shelf (OTS) acquisition strategy.</p> <p>25. (U) (8410-8503) This Laboratory received the certificate of transition from the US Army Troop Support Command in Dec 84.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA307124	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 03	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO. CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	041			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRDP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Plant Uptake of TNT							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology; 06 06 Environmental Biology							
13. START DATE 85 01	14. ESTIMATED COMPLETION DATE 87 03	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 06	EXPIRATION 87 03	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 85PP5832							
c. TYPE PP	d. AMOUNT -0-	84		0.0	00		
e. KIND OF AWARD CON	f. CUM. TOTAL 130000	85		2.4	130		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Engineer Cold Regions Research & Engineering Lab			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS ATTN: Budget Officer  Hanover, NH 03755			
c. NAME OF RESPONSIBLE INDIVIDUAL GARDNER, H S				c. NAME OF PRINCIPAL INVESTIGATOR PALAZZO, A J			
d. TELEPHONE NUMBER (include area code) 301-663-7627				d. TELEPHONE NUMBER (include area code) AV 684-4374			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Munitions; (U) Plant Uptake; (U) Trinitrotoluene; (U) Polar Organics; (U) PO (U) RAM III							
23. (U) This study is designed to determine the uptake and metabolism of TNT by various plants species grown hydroponically.							
24. (U) The research will determine how various plant species take up TNT by measuring differences in growth in plants grown hydroponically in solutions containing TNT. Plants exhibiting the greatest and least effects as measured by total dry weight and nutrient uptake will then be analyzed for TNT and metabolites. In addition, sample storability/analytical method improvement will be accomplished for TNT in plant tissue. Plant depuration of TNT will also be measured to determine the detoxification of TNT by various species.							
25. (U) 8506 - 8509. Seven species of plants have been selected and are being grown in both sand and hydroponic cultures. TNT is being applied to these cultures for the determination of TNT uptake and depuration. Plants from a previous test involving perennial rye grass exposed to 3 mg/L of TNT for two weeks, transferred to clean solutions and sampled on a weekly basis are currently undergoing chemical analysis.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DA302452	85 10 01	DD-DR&E(AR) 636	
3. DATE PREV SUMMARY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT	
85 02 28	D CHANGE	U	U		DX		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	042			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code)(U) Histological, Histochemical, and Ultrastructural Characterization of Lesions in Fishes Exposed to Known Carcinogens with Emphasis on							
12. SUBJECT AREAS Neoplastic Development							
06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE	14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
83 07	85 12		DA		D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	85 07	EXPIRATION	85 12	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER	83PP3813						
c. TYPE	d. AMOUNT		-0-	84	0.9	54	
e. KIND OF AWARD	f. CUM/TOTAL		161500	85	0.5	30	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Environmental Protection Agency Environmental Research Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Sabine Island Gulf Breeze, FL 32561			
c. NAME OF RESPONSIBLE INDIVIDUAL KELLY, J A				c. NAME OF PRINCIPAL INVESTIGATOR COUCH, J A			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 904-932-5311			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)(U) Carcinogens; (U) Fish Tumors; (U) Lab Animal; (U) Histochemistry; (U) RAM III; (U) PO; (U) Fish							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To determine if fish, exposed to carcinogens for selected periods during critical life stages, will develop chronic lesions or tumors within 18 months; and to histologically and histochemically characterize these pre-neoplastic and neoplastic lesions in order to abbreviate time-to-endpoint in carcinogen assays. The compound used in this study, N-nitrosodiethylamine, is a waste product of rocket fuel and munition production.</p> <p>24. (U) Approximately 200 juvenile individuals of each of three species of fish will be exposed to N-nitrosodiethylamine (DEN) for up to 8 weeks. Survivors will be held in clean water for up to 12 months and sampled periodically for histological, histochemical and ultrastructural studies.</p> <p>25. (U) 8410 - 8509. Progress for this period included completion of biochemical and morphological alterations in the tissue of <u>Cyprinodon variegatus</u>, a marine fish, exposed to N-nitrosodiethylamine (DEN).</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA302881	85 03 22	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
84 02 06	H TERM	U	U		CX	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	61102A	3E161102BS04	AA	043		
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code)						
(U) Environmental Fate of Pentachlorophenol in Outdoor Experimental Channels						
12. SUBJECT AREAS						
06 06 Environmental Biology; 06 20 Toxicology; 07 03 Organic Chemistry						
13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING ORGANIZATION	16. PERFORMANCE METHOD			
82 06	84 12	DA	D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 8410	EXPIRATION 84 12	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 82PP2808						
c. TYPE	d. AMOUNT -0-	84	0.2	00		
e. KIND OF AWARD CON	f. CUM/TOTAL 60000	85	0.1	00		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Environmental Protection Agency Environmental Research Laboratory-Duluth			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS 6201 Congdon Boulevard Duluth, MN 55804			
c. NAME OF RESPONSIBLE INDIVIDUAL van der SCHALIE, W H			c. NAME OF PRINCIPAL INVESTIGATOR THOMAS, N A			
d. TELEPHONE NUMBER (include area code) 301-663-7627			d. TELEPHONE NUMBER (include area code)			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pentachlorophenol; (U) Environmental Fate; (U) Aquatic Toxicology; (U) Water Quality; (U) RAD III; (U) PO						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
<p>23. (U) Physical, chemical and biological parameters relating to the fate and transport of pentachlorophenol in outdoor experimental streams will be measured to allow the calibration and validation of several proposed environmental fate models for organic compounds in water.</p> <p>24. (U) Pentachlorophenol concentrations will be monitored in stream channels dosed with the compound. Processes affecting the fate of pentachlorophenol in stream water such as photolysis, biodegradation, and adsorption to sediments and aquatic organisms will be measured as will numerous physical and chemical parameters known to influence the fate and transport of chemicals in water. These data will be analyzed using existing environmental fate models to see how well actual pentachlorophenol concentrations in the streams are predicted.</p> <p>25. (U) 8311 - 8409. Little progress has been made on the remaining final reports for this project. The US Environmental Protection Agency has had difficulty in completing reports on the biological effects and environmental fate modeling studies with pentachlorophenol.</p>						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA302965	2. DATE OF SUMMARY 85 08 05	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 01 03	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	044			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Collaborative Research Program: Interlaboratory Testing of Aquatic Microcosm Protocol							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 83 05	14. ESTIMATED COMPLETION DATE 86 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 09	EXPIRATION 86 09	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 83PP3811							
c. TYPE PP	d. AMOUNT -0-	84		2.4	90		
e. KIND OF AWARD CON	f. CUM/TOTAL 225000	85		1.9	85		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Environmental Impact Section Food & Drug Administration (HFF-27)			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 200 C Street, SW Washington, DC 20204			
c. NAME OF RESPONSIBLE INDIVIDUAL van der SCHALIE W H				c. NAME OF PRINCIPAL INVESTIGATOR HOFFMAN, B L			
d. TELEPHONE NUMBER (include area code) 301-663-7627				d. TELEPHONE NUMBER (include area code) FTS 485-0276			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) MATHESON, J			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Aquatic Toxicology; (U) Microcosms; (U) Interlaboratory; (U) Bioassay; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The Army has the responsibility for determining the potential hazard to aquatic organisms of materials discharged into surface waters from Army facilities. A major obstacle to accurate predictions of toxic effects is the lack of a standardized validated test that measures ecosystems-level effects as opposed to effects on individual species of aquatic organisms. This project will subject a previously-developed aquatic microcosm test to interlaboratory testing and evaluation. If proven reliable and reproducible, the microcosm test can be a useful tool for evaluating the toxic impact of materials on aquatic communities. This project is funded under an interagency agreement with the US Food and Drug Administration.</p> <p>24. (U) Several 63-day microcosm tests utilizing copper as a toxicant will be conducted at a number of participating laboratories. The reproducibility of the test and its usefulness in screening for the toxic effects of materials on aquatic organisms will be evaluated.</p> <p>25. (U) 8501 - 8508. Initial pre-microcosm testing has been completed by the third and fourth laboratories participating in the collaborative study. An additional test with copper has been completed at the reference laboratory (University of Washington), and the results from the test are now being analyzed.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA304825	2. DATE OF SUMMARY 85 10 18	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 10	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	045			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Computerization of a Preliminary Pollutant Limit Value Concept							
12. SUBJECT AREAS 06 06 Environmental Biology; 07 03 Organic Chemistry; 07 04 Physical Chemistry							
13. START DATE 84 09	14. ESTIMATED COMPLETION DATE 86 08	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 12	EXPIRATION 86 08	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 84PP4857							
c. TYPE pp	d. AMOUNT -0-	85		0.5	84		
e. KIND OF AWARD CON	f. CUM/TOTAL 132000	86		0.0	00		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Construction Engineering Research Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 4005 Champaign, IL 61820			
c. NAME OF RESPONSIBLE INDIVIDUAL van der SCHALIE, W H				c. NAME OF PRINCIPAL INVESTIGATOR MESSENGER, M			
d. TELEPHONE NUMBER (include area code) 301-663-7627				d. TELEPHONE NUMBER (include area code) 217-352-6511			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Pollution; (U) Soil; (U) Groundwater; (U) Chemicals; (U) Criteria; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) Automate the PPLV calculation methodology to increase the ease of use and reduce the burden of data processing.							
24. (U) Develop an interactive, user-friendly system to accept data inputs from the user and perform necessary PPLV calculations. Establish a protocol for development of data inputs from commercial and public data bases and computerized models and procedures, and network the PPLV calculation program to these data bases or systems.							
25. (U) 8412 - 8509. A prototype program has been implemented that accepts data input from the user or checks a disk datafile for the data. A list of 303 chemicals which are to major concern to the Army user community has been added to the data base. Information on these compounds has been obtained from computerized data bases and the data reformatted into the structure acceptable to the interactive program.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 305366	2. DATE OF SUMMARY 85 01 29	REPORT CONTROL SYMBOL DD-DR&B(AR) 636
3. DATE PREV SUM'RY 84 10 16	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	61102A	3E161102BS04	AA	046		
b. CONTRIBUTING						
c. CONTINUING	STOG 82/83-6.2/2					
11. TITLE (Precede with Security Classification Code) (U) Reproductive Evaluation of Potential Toxicants						
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology						
13. START DATE 84 08	14. ESTIMATED COMPLETION DATE 88 08	15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 8412	EXPIRATION 85 12	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 84PP4859						
c. TYPE	d. AMOUNT 168383	84	2.0	107		
e. KIND OF AWARD	f. CUM/TOTAL 275000	85	3.1	168		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Development Biology Division, MD-72 Health Effects Research Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Environmental Protection Agency Research Triangle Park, NC 27711			
c. NAME OF RESPONSIBLE INDIVIDUAL BAUSUM, H T			c. NAME OF PRINCIPAL INVESTIGATOR LASKEY, J W			
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 919-541-4050			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) GRAY, I			
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Rats; (U) Mice; (U) Guinea Pigs; (U) Reproduction; (U) Lab Animals; (U) Toxicology; (U) Chemicals; (U) RAM III; (U) PO						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) The objective of this project is to develop test procedures that will rapidly identify compounds potentially hazardous to the reproductive system. This approach is more cost effective than the multigenerational approach in identifying compounds which need more complete evaluation, and in eliminating those with no reproductive impact. This will allow for quicker, more cost-effective evaluations of toxic substances which may have reproductive implications to civilian and military personnel.						
24. (U) This project will be conducted in two phases. Phase I consists of protocol standardization for Level 1 testing, screening of toxicants. Phase II will involve validation of the screening procedures for Level 1 using other laboratories. Development of Level 2 test procedures will also be conducted during the second phase.						
25. (U) 8408 - 8412. The Phase I studies have been initiated. Protocols are being standardized.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG7065	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 22	4. KIND OF SUMMARY K COMP	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER		TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	61102A	3E1611028S04		AA	049		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY85-01						
11. TITLE (Precede with Security Classification Code) (U) Chemical Analysis of Dursban in Outdoor Experimental Channels							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology; 07 03 Organic Chemistry							
13. START DATE 81 05		14. ESTIMATED COMPLETION DATE 84 12		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 83 12		EXPIRATION 84 12		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER 81PP1806						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		0.2	
e. KIND OF AWARD CON		f. CUM/TOTAL 68133		85		0.1	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME The College of William and Mary			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Williamsburg, VA 23185			
c. NAME OF RESPONSIBLE INDIVIDUAL van der SCHALIE, W H				c. NAME OF PRINCIPAL INVESTIGATOR KIEFER, R L			
d. TELEPHONE NUMBER (include area code) 301-663-7627				d. TELEPHONE NUMBER (include area code)			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Dursban; (U) Pesticides; (U) Aquatic Toxicology; (U) Water Quality; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Objective is to provide detailed chemical analyses of the pesticide Dursban in the water, sediments, and biota of stream ecosystem. Other water quality parameters will be analyzed and all data will be used to help determine the fate and transport of this chemical in aquatic systems. Supplemental information on the interactions of Dursban with microbial communities will also be obtained.</p> <p>24. (U) Samples of water, sediments, and biota will be collected and analyzed onsite. Dursban concentrations will be determined by gas chromatographic techniques following appropriate extraction procedures. Other water quality parameters will be determined using standard methodologies. Field samples will also be used to evaluate the effects of Dursban on microorganisms and the ability of the microorganisms to degrade or transform Dursban.</p> <p>25. (U) 8410 - 8509. Chemical analyses of Dursban in the water, sediments, and biota of artificial streams have been used to determine the environmental fate and transport of this material. Adsorption to sediment and subsequent hydrolysis caused significant loss of Dursban from the artificial streams. Microbial degradation was negligible. Environmental fate predictions on the EXAMS environmental fate model system were in reasonable accord with experimental observations. Reports generated include "Fate of the Pesticide Chlorpyrifos in Outdoor Experimental Channels" (1983) and "Biological Effects of Dursban in Outdoor Experimental Streams" (1984). These results indicate that the EXAMS model may have some application in monitoring the environmental fate of Army-relevant chemicals in streams.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 301451	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY H TERM	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	054			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) The Development of a Mathematical Model to Describe the Fate of 2,4,6-Trinitrotoluene (TNT) in a Vascular Aquatic Plant System							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 83 05	14. ESTIMATED COMPLETION DATE 85 07		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 12	EXPIRATION 85 07		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER DAMD17-83-C-3166							
c. TYPE S	d. AMOUNT -0-		84	1.0	47		
e. KIND OF AWARD CON	f. CUM/TOTAL 97061		85	1.0	00		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Tulane University School of Public Health & Tropical Medicine			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Dept. of Environmental Health Sciences 1430 Tulane Avenue New Orleans, LA 70112			
c. NAME OF RESPONSIBLE INDIVIDUAL GARDNER, H S				c. NAME OF PRINCIPAL INVESTIGATOR ENGLANDE, A J			
d. TELEPHONE NUMBER (include area code) 301-663-7627				d. TELEPHONE NUMBER (include area code) 504-588-5374			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available) BARBER, J T			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) TNT; (U) Aquatic Toxicology; (U) Aquatic Plants; (U) Mathematical Models; (U) RAD III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) This project is part of a larger effort to develop a data base on the toxicity of 2,4,6-trinitrotoluene (TNT) and other munitions-related materials to aquatic organisms. Specifically, this project will determine the toxicity of TNT to an aquatic vascular plant and will attempt to model the dynamics of TNT in plant tissues. The results will be used along with data from other investigations to assess the hazard to aquatic organisms associated with potential discharges of TNT from Army facilities.</p> <p>24. (U) Aquatic vascular plants will be raised in defined media and exposed to TNT. Available analytical techniques for determining TNT concentrations in water and plant tissues will be developed and validated. Preliminary tests will address the acute toxicity and uptake of TNT by the plant. If substantial uptake is demonstrated, the kinetics of TNT movement between the plant and the water will be determined, and the application of mathematical models to describe the behavior of the system will be investigated.</p> <p>25. (U) 8410 - 8509. Literature review, preliminary analytical technique development, equipment purchase and preliminary range-finding toxicity studies have been accomplished. Additional analytical techniques as well a definitive toxicity testing have also been accomplished. Draft final report is currently being reviewed and subsequent to final publication.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA301798	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 19 04	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3E161102BS04	AA	056			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Biochemical, Pharmacological, and Tumorigenic Effects of Drinking Water Carcinogens on Fish							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 82 09	14. ESTIMATED COMPLETION DATE 86 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 08	EXPIRATION 86 09	FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 82PP2814							
c. TYPE PP	d. AMOUNT -0-	85		0.0	00		
e. KIND OF AWARD CON	f. CUM/TOTAL 200000	86		0.0	00		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME National Cancer Institute Blair Building			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 3300 Colesville Road Silver Spring, MD 20910			
c. NAME OF RESPONSIBLE INDIVIDUAL KELLY, J A				c. NAME OF PRINCIPAL INVESTIGATOR CAMERON, T R			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 301-496-1625			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Carcinogens; (U) Fish Tumors; (U) Animal Models; (U) Drinking Water; (U) Lab Animals; (U) Fish; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) This project is a feasibility study to determine if fish can be used to evaluate potential carcinogens and mutagens on a routine basis. The toxicants selected are 14 drinking water contaminants that may be carcinogenic in mixture or separately. Levels of these contaminants found in drinking water will be included in the tests. Complete pathology and selected biochemical tests will be performed on marine and freshwater fish exposed to drinking water contaminants. This study will determine if fish can be used to detect mutagens/carcinogens in military drinking water supplies.</p> <p>24. (U) The study will be conducted in phases. Phase I will determine if a mixture of drinking water contaminants is tumorigenic to fish. Phase II will be concerned with a bioassay of two to five components to evaluate synergism or inhibition.</p> <p>25. (U) 8410 - 8509. Progress for this period included: (1) About 30 isolated cases of neoplasms, lesions known to accompany neoplasia, and lesions suspected to develop as neoplasms have been induced in the guppy and medaka exposed to a mixture of "trihalomethanes"; (2) Methylazoxymethanol acetate (MAM-Ac) has proven to be a good enhancement procedure for inducing neoplasms and associated lesions in the liver and other tissues and (3) a good model for a medullopithelioma of the medaka eye has been developed.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305393	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER	
a. PRIMARY		61102A	3M161102BS10	CC	341	
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY85-01				
11. TITLE (Precede with Security Classification Code) (U) Extrapolation of Inhaled Particulate Toxicity Data from Experimental Animals to Humans						
12. SUBJECT AREAS 06 20 Toxicology; 06 01 Biochemistry; 06 15 Pharmacology						
13. START DATE 84 08		14. ESTIMATED COMPLETION DATE 87 08		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE 85 10		EXPIRATION 87 08		FISCAL YEARS		a. PROFESSIONAL WORK YEARS
b. CONTRACT/GRANT NUMBER		84PP4848				b. FUNDS (In thousands)
c. TYPE		d. AMOUNT 202513		85		1.2
e. KIND OF AWARD SUP		f. CUM/TOTAL 507888		86		2.5
						100
						203
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Toxicology Branch, MD-82 Inhalation Toxicology Division		
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Health Effects Research Lab-USEPA Research Triangle Park, NC 27711		
c. NAME OF RESPONSIBLE INDIVIDUAL HENRY, M C				c. NAME OF PRINCIPAL INVESTIGATOR HATCH, G E		
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 919-541-2531		
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Volunteers; (U) Lab Animals; (U) Rabbits; (U) Rodents; (U) RAM III; (U) Toxicity; (U) Extrapolation; (U) Methods Development; (U) PO						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) The objective of this research is to quantitatively associate species sensitivity or response to the dose of inhaled particulates and to extrapolate to human effects.						
24. (U) Several species of animals will be exposed via inhalation to particulate matter. Pulmonary effects will be estimated from the relative sensitivities of pulmonary tract tissues. Extrapolation of necessity must be from in vivo animal effects to in vitro human tissue responses.						
25. (U) 8502 - 8509. Comparisons between human nasal turbinate cells and rat nasal cells in regard to viability in cell culture show that both cell types can be maintained under in vitro conditions. The adenine mononucleotide pools in both cell types are similar. Although there is some variability among tissues from different human donors, the responses to toxic metal ions are similar.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DA306631	85 08 23	DD-DR&E(IAR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT	
85 02 23	D CHANGE	U	U		DX		
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	61102A	3M161102BS10	CC	343			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code)(U) Development of a Mouse Lung-Liver Model for the Testing of Military-Relevant Compounds for Carcinogenic Activity							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 01 Biochemistry; 06 15 Pharmacology; 06 20 Toxicology							
13. START DATE	14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
85 02	88 05		DA		B Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 02		EXPIRATION 88 05		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER DAMD17-85-C-5014							
c. TYPE S		d. AMOUNT 297487		85	3.8	277	
e. KIND OF AWARD CON		f. CUM/TOTAL 574511		86	4.1	297	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Medical College of Ohio			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS C.S. #10008 Toledo, OH 43601			
c. NAME OF RESPONSIBLE INDIVIDUAL FINCH, R A				c. NAME OF PRINCIPAL INVESTIGATOR STONER, G D			
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 419-381-4408			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) SHUT, H			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)(U) Pharmacology; (U) Lab Animals; (U) Mice; (U) Tumorigenicity; (U) Metabolism; (U) Initiation; (U) Promotion; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To develop a hybrid mouse strain with a broader spectrum of susceptibility to carcinogens than the Strain A mouse. To evaluate a transplacental carcinogenesis system for the detection of promoters of lung and liver cancer. To determine the relationship between DNA adduct formation and susceptibility to dimethylnitrosamine-induced carcinogenesis.</p> <p>24. (U) Two strains of mice, A/J and C<sub>3</sub>HeB/FeJ, susceptible to lung and liver carcinogens, respectively, will be crossed in an effort to develop a hybrid strain with a broader spectrum of susceptibility to chemical carcinogens. The hybrids will be exposed to various chemicals of known carcinogenic potential in order to validate the assay. Pilot studies by the investigators on these hybrid strains have shown promise. A transplacental assay utilizing the A/J mouse strain will be developed as a short-term test for the identification of tumor promoters. This assay will take advantage of the fact that the sensitivity of an exposed animal to the effects of cancer initiators and promoters is inversely related to the animal's age. The relationship between DNA-adduct formation and susceptibility to chemically induced carcinogenesis will be studied using various biochemical techniques. The study will generate information about the underlying mechanisms of the initiation process. This information will provide a scientific basis for the utilization of a particular animal model as a bioassay system. Dimethylnitrosamine (DMN) will be used as a model carcinogen in this study.</p> <p>25. (U) 8502 - 8508. Examination of health status of animals in breeding colony is underway. Hybrid strain is being used in studies to assess dose-response effects and effect of age at time of exposure to carcinogen on tumor response. Comparison of lung and liver tumor response in parental and hybrid strains treated with DMN is in progress. Study on relationship between carcinogen-DNA adduct formation and persistence and carcinogenic susceptibility has been initiated.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA300033	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 27	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	001			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Neurotoxicology of Cyclotrimethylenetrinitramine (RDX)							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 82 09	14. ESTIMATED COMPLETION DATE 85 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 06		EXPIRATION 85 09		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER 82PP2813						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		0.7	
e. KIND OF AWARD CON		f. CUM/TOTAL 184000		85		0.3	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Neurotoxicology Division (MD-74B), USEPA Health Effects Research Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Research Triangle Park, NC 27711			
c. NAME OF RESPONSIBLE INDIVIDUAL REDDY, G				c. NAME OF PRINCIPAL INVESTIGATOR MACPHAIL, R			
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 919-541-7734			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) RDX; (U) Hazard Assessment; (U) Behavioral Toxicology; (U) Environmental Biology; (U) PO; (U) RAM III; (U) Lab Animals; (U) Rate							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The objective of this research is to define the early neurotoxic effects of RDX by a battery of screening tests.							
24. (U) The approach to this problem is to measure the behavioral changes induced by single acute exposures and then repeated dosage study.							
25. (U) 8503 - 8509. Acute effects of RDX (12.5, 25, 50 mg/kg) by single oral dose in male rats on the following tests were assessed: (a) flavor aversion conditioning; (b) schedule-controlled behavior; (c) acoustic startle response; (d) motor activity and (e) landing foot spread. All tests showed decrease in activity after treatment. The levels of RDX in blood (3 mg/ml) and brain (4.5 mg/g) reached a steady state in two hours after dosing and remained so for up to 24 hours, then decreased by 3 days after administration of 50 mg/kg. The subchronic effects of RDX in rats were studied using oral doses (1, 3, 10 mg/kg) daily for 30 days. Testing was done on day 16 and day 31. The results of these experiments showed that, in contrast to acute effects there was no change in neurobehavioral effects. Final draft report is under review.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA307238	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 06	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N EP	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62720A	3E162720A835	AA	003		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Behavioral-Physiological Effects of White Phosphorus Smoke Inhalation on Two Wildlife Species							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology; 06 01 Biochemistry							
13. START DATE 85 03		14. ESTIMATED COMPLETION DATE 88 02		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 03		EXPIRATION 88 02		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 85PP5847							
c. TYPE PP		d. AMOUNT -0-		84	0.0	15	
e. KIND OF AWARD CON		f. CUM/TOTAL 446278		85	6.0	431	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Fish and Wildlife Service Denver Wildlife Research Center			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Building 16, Federal Center Denver, CO 80225			
c. NAME OF RESPONSIBLE INDIVIDUAL GARDNER, H S				c. NAME OF PRINCIPAL INVESTIGATOR THOMPSON, R D			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 303-236-7858			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available) SHUMAKE, S			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Ecological Effects; (U) Screening Smoke; (U) Toxicology; (U) Prairie Dogs; (U) Pigeons; (U) RAM III; (U) PO; (U) Lab Animals							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The objective of this study is to determine the neurobehavioral toxicity of white phosphorus smoke to two wildlife species.							
24. (U) The research will determine baseline physiological and behavioral values for wild pigeons and prairie dogs. These animals will then be exposed to sublethal concentrations of white phosphorus smoke. Deviations from "normal" will be determined for physiological as well as behavioral parameters.							
25. (U) 8503 - 8509. Equipment has been purchased and a contract for the large analytical items has been advertised. Administrative procedures to transfer funds from the Department of Interior to the Oak Ridge National Laboratory for the generator development have also been accomplished.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA302759	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 27	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62720A	3E162720A835	AA	005		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Smoke and Obscurants: A Health and Environmental Effects Data Base Assessment							
12. SUBJECT AREAS 19 01 Ammunition, Explosives, and Pyrotechnics; 06 06 Environmental Biology; 06 09 Hygiene and Sanitation							
13. START DATE 83 10		14. ESTIMATED COMPLETION DATE 86 05		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 10		EXPIRATION 86 05		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER 83PP3819						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		0.1	
e. KIND OF AWARD CON		f. CUM/TOTAL 605606		85		3.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Environmental Sciences Division Lawrence Livermore National Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 5507 Livermore, CA 94550			
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENBLATT, D H				c. NAME OF PRINCIPAL INVESTIGATOR SHINN, J H			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 415-422-6806			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) DANIELS, J I			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Hazards; (U) Health Protection; (U) Smokes; (U) Obscurants; (U) Environmental Effects; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To assemble and evaluate a body of data on which to base projections and decisions relating to the health effects and environmental impacts of the US Army's current and proposed smokes and obscurants (S&amp;O). S&amp;O include large area visual screening smokes, as well as materials to screen against infrared, microwave and multispectral radiation. The emphasis is on the non-occupational environmental effects of S&amp;O following dispersion.</p> <p>24. (U) The first phase will consist of preliminary compilation and evaluation of information: formulation of a search strategy; acquisition of documents and other types of information; categorization of S&amp;O and their decomposition products; determination of amounts produced; assessment of the properties of selected chemicals; and formulation of selection criteria for Phase II studies. The second phase will be concerned with thorough data searches and evaluations for selected chemicals.</p> <p>25. (U) 8410 - 8509. Phase I draft report was received, extensively edited, and returned to the performer for implementation of changes.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA302760	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 27	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62720A	3E162720A835	AA	006		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Conventional Weapons Demilitarization: A Health and Environmental Effects Data Base Assessment							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 09 Hygiene and Sanitation; 06 20 Toxicology;							
13. START DATE 83 10		14. ESTIMATED COMPLETION DATE 86 11		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 83 10		EXPIRATION 86 11		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER		83PP3818					
c. TYPE PP		d. AMOUNT -0-		84	0.2	32	
e. KIND OF AWARD CON		f. CUM/TOTAL 736480		85	4.0	440	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Environmental Sciences Division Lawrence Livermore National Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 5507 Livermore, CA 94550			
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENBLATT, D H				c. NAME OF PRINCIPAL INVESTIGATOR LAYTON, D			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 415-422-0918			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available) MEADE, W			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Hazards; (U) Health Protection; (U) Demilitarization; (U) Environmental Effects; (U) RAM III; (U) PO							
23 TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To assemble and evaluate a data base defining state-of-the-art knowledge of the US Army's current and proposed conventional weapons demilitarization processes and their effluents, and of environmental effects associated with the effluents.</p> <p>24. (U) The first phase will consist of preliminary compilation and evaluation of information: formulation of a search strategy; acquisition of documents and other types of information; location of sites and sources of demilitarization products; determination of current demilitarization processes, their effluents; development of the pathways of these effluents into the environment; and criteria for selecting the processes and products of greatest interest. The second phase will be concerned with thorough data searches and evaluations for selected chemicals.</p> <p>25. (U) 8410 - 8509. Phase I report was completed in draft and edited. Phase II work is in progress.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303024	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY H TERM	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E16272A835	AA	007			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Acute Toxicity of Smoke Screen Materials to Aquatic Organisms							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 83 10	14. ESTIMATED COMPLETION DATE 85 04		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 03	EXPIRATION 85 04		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 84PP4800							
c. TYPE PP	d. AMOUNT -0-		84		0.0	34	
e. KIND OF AWARD CON	f. CUM/TOTAL 348584		85		1.3	88	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Energy Programs Division U.S. Department of Energy				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box 550 Richland, WA 99352				
c. NAME OF RESPONSIBLE INDIVIDUAL van der SCHALIE, W			c. NAME OF PRINCIPAL INVESTIGATOR POSTON, T M				
d. TELEPHONE NUMBER (include area code) 301-663-7627			d. TELEPHONE NUMBER (include area code) 509-376-5678				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: F			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Lab Animals; (U) Fish; (U) Aquatic Toxicology; (U) Fog Oil; (U) White Phosphorus; (U) Red Phosphorus; (U) Smoke; (U) Toxicity; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. The Army utilizes various smokes at training facilities around the country, and there is a need to define the possible environmental hazards associated with these materials. This research will determine the acute toxicity to aquatic organisms of several Army smoke materials (fog oil and fog oil smoke, white phosphorus-felt smoke, and red phosphorus butyl rubber smoke).</p> <p>24. (U) Appropriate dosing procedures and analytical methods for the smoke materials will first be developed and validated. The acute toxicity of each material to freshwater fish, invertebrates, and algae will then be determined.</p> <p>25. (U) 8502 - 8509. The draft final report has been reviewed and final revisions are being completed. The toxicity of the phosphorus smokes is primarily related to the low pH of aqueous solutions of these materials. Fog oil and fog oil smoke are relatively non-toxic to aquatic organisms, but photolysis results in a moderate increase in toxicity.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303077	2. DATE OF SUMMARY 85 09 30	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 12 12	4. KIND OF SUMMARY H TERM	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA	008		
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Terrestrial Microcosm Evaluation of Two Army Smoke-Producing Compounds						
12. SUBJECT AREAS 06 06 Environmental Biology; 07 02 Inorganic Chemistry; 07 04 Physical Chemistry						
13. START DATE 83 12	14. ESTIMATED COMPLETION DATE 85 03	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE 84 12	EXPIRATION 86 03	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4001						
c. TYPE U	d. AMOUNT -0-	84		2.0	198	
e. KIND OF AWARD CON	f. CUM/TOTAL 365497	85		1.5	87	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Battelle Memorial Institute Columbus Laboratories		
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 505 King Avenue Columbus, OH 43201-2693		
c. NAME OF RESPONSIBLE INDIVIDUAL BRATT, G M				c. NAME OF PRINCIPAL INVESTIGATOR DUKE, K M		
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 614-424-6426		
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Terrestrial Microcosm; (U) White Phosphorus/Felt; (U) Red Phosphorus/Butyl Rubber; (U) Fog Oil; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) The objective of this study is to evaluate the applicability of the terrestrial microcosm as a hazard assessment tool for chemicals used by the Army, by evaluating the effects of Army smokes, white phosphorus/felt (WP/F) and red phosphorus/butyl rubber (RP/BR), and fog oil on ecosystem-level processes.						
24. (U) The intact-soil-core microcosm techniques will be used to evaluate ecosystem-level processes. Terrestrial microcosm's will be constructed and planted, smokes characterized, and microcosm's dosed. A range-find and then definitive tests will precede chemical analyses. Nutrient loss, plant productivity, trace element uptake, and soil respiration will be monitored. Soil leachate studies will be done concurrently.						
25. (U) 8412 - 8509. The study has been completed. Both the red phosphorus/butyl rubber and white phosphorus/felt smokes seem to have little adverse impact on plants at field relevant concentrations. Draft final report is under review.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA301895	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(IAR) 636
3. DATE PREV SUM'RY 85 04 10	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA	009		
b. CONTRIBUTING	61102A	3E161102BS04	AA	057		
c. DOCUMENTING	DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code)(U) Plant Uptake of 2,4,6-Trinitrotoluene (TNT), A Model for Polar Organic Compounds						
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology; 06 06 Environmental Biology						
13. START DATE 82 10	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 04 EXPIRATION 86 09			FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER 82II2032						
c. TYPE II			84		2.5	100
d. AMOUNT -0-			85		2.7	115
e. KIND OF AWARD CON			f. CUM/TOTAL 390000			
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Department of the Army Waterways Experiment Station			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Corps of Engineers (EL) P.O. Box 631, ATTN: Budget Officer Vicksburg, MS 39180			
c. NAME OF RESPONSIBLE INDIVIDUAL GARDNER, H S			c. NAME OF PRINCIPAL INVESTIGATOR FOLSOM, B L			
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 601-634-3720			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: 11			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Munitions; (U) Plant Uptake; (U) Trinitrotoluene; (U) Polar Organics; (U) RAM III; (U) IAO						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) This research is designed to assess the effects of TNT on plants.						
24. (U) These two tasks are focused on the uptake of TNT in various soils and the metabolism/breakdown of the xenobiotic material.						
25. (U) 8412 - 8509. Tests of TNT uptake in a variety of soils has been accomplished. Radiolabeled TNT has been procured for the planned uptake studies. Uptake studies are underway at this time.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303762	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 08	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62720A	3E162720A835	AA	010		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY 86-01					
11. TITLE (Precede with Security Classification Code) (U) Army Environmental Quality Technology Program Coordination							
12. SUBJECT AREAS 05 01 Administration and Management; 05 02 Technology Program Coordination							
13. START DATE 84 02		14. ESTIMATED COMPLETION DATE 86 02		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 11		EXPIRATION 86 02		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER		84II4007				b. FUNDS (In thousands)	
c. TYPE II		d. AMOUNT -0-		84		0.4	
e. KIND OF AWARD CON		f. CUM/TOTAL 60000		85		0.4	
						60	
						00	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Construction Engineering Research Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 4005 Champaign, IL 61820			
c. NAME OF RESPONSIBLE INDIVIDUAL BARKLEY, J J				c. NAME OF PRINCIPAL INVESTIGATOR NOVAK, E W			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 217-352-6511			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Program Coordination; (U) EQTCC; (U) Army Environmental Program; (U) RAM III; (U) IAO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objectives are: (a) review and coordinate the Environmental Quality Technology (EQT) program; (b) schedule and plan such reviews; (c) review and evaluate Air Force, Navy and other Federal agency programs; (d) revise, update and coordinate the FY83 EQT Briefing; (e) keep current with environmental trends and (f) develop and distribute an EQT Information Bulletin.</p> <p>24. (U) The approach consists of essentially correspondence and coordination meetings covering the objective topics.</p> <p>25. (U) 8501 - 8509. All objectives continue to be met.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303914	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 07 08	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	011			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) A Health and Environmental Effects Data Base Assessment of US Army Waste Material							
12. SUBJECT AREAS 06 06 Environmental Biology; 05 02 Documentation and Information Technology; 06 20 Toxicology							
13. START DATE 84 04	14. ESTIMATED COMPLETION DATE 85 11		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD B Contract			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 07	EXPIRATION 85 11		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4133							
c. TYPE U	d. AMOUNT -0-		84	0.8	26		
e. KIND OF AWARD CON	f. CUM/TOTAL 290736		85	3.5	0		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Carltech Associates, Inc.				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box 1158 Columbia, MD 21044				
c. NAME OF RESPONSIBLE INDIVIDUAL SMALL, M J			c. NAME OF PRINCIPAL INVESTIGATOR UHRMACHER, J C				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 301-596-5912				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L			f. NAME OF ASSOCIATE INVESTIGATOR (if available) SCHULTZ, D g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Data Base Assessment; (U) Hazardous Wastes; (U) Environmental Effects; (U) RAM III; (U) SRIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The objective of this study is to assemble and evaluate a data base defining state-of-the-art knowledge of the health and environmental effects associated with selected Army-unique toxic and hazardous waste materials.							
24. (U) This study shall be conducted in two phases. Phase I shall be a comprehensive data base compilation during which Army contracts are made, the magnitude of the problem assessed, and waste materials selected for study. Phase II shall be data acquisition and evaluation.							
25. (U) 8507 - 8509. Phase I has been completed and a draft final report prepared. Sixty-two materials have been selected for Phase II processing.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA304000	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 02 28	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES a. PRIMARY	PROGRAM ELEMENT 62720A	PROJECT NUMBER BE162720A835	TASK AREA NUMBER AA	WORK UNIT NUMBER 012			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Field Measurement and Model Evaluation Program for Assessment of the Environmental Effects of Military Smokes							
12. SUBJECT AREAS 09 01 Atmospheric Physics; 07 03 Organic Chemistry; 06 21 Weapons Effects							
13. START DATE 84 04	14. ESTIMATED COMPLETION DATE 87 04		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	85 10	EXPIRATION	87 04	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER	84PP4822			85	3.3	390	
c. TYPE	PP	d. AMOUNT	193100	86	3.2	00	
e. KIND OF AWARD	SUP	f. CUM/TOTAL	573200				
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Argonne National Laboratory Department of Energy				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Argonne, IL 60439				
c. NAME OF RESPONSIBLE INDIVIDUAL PARMER, D L			c. NAME OF PRINCIPAL INVESTIGATOR POLICASTRO, A J				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 312-972-3235				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) DUNN, W				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Smoke Deposition; (U) Mathematical Modeling; (U) Fog Oil; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The principal objective of this work is to develop mathematical model and chemical sampling techniques applicable to predictions of the environmental impact of deposited smoke material on the soil, water, plant and animal life indigenous to representative areas where smokes are employed.							
24. (U) Mathematical modeling and chemical sampling techniques will be evaluated in a series of progressively complex terrain and meteorological situations. The first field trial series will utilize the existing smoke modeling facilities of the US Army Dugway Proving Ground to understand the downwind dispersion of fog oil generated by a standard US Army tactical smoke generator. The focus of the scientific research in the field trial at DPG will be to understand what dispersion characteristics can be modeled to satisfactorily predict fog oil concentrations at the point of interest. Based upon the understanding gained from these trials, subsequent protocols will be defined for more complex terrain modeling and for different smokes in the Army inventory.							
25. (U) 8412 - 8509. A field trial was completed at Dugway Proving Ground in April 1985 which included 11 cases. Stability classes B, C and D were evaluated at wind speeds of 3 to 6 m/s. Data analysis is underway. Planning has been initiated for the next series of field trials with an experimental focus on stability classes E and F and higher humidity conditions.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA304087	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 02 06	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT 62720A	PROJECT NUMBER 3E162720A835	TASK AREA NUMBER AA	WORK UNIT NUMBER 013			
a. PRIMARY							
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Evaluate and Characterize Mechanisms Controlling Transport of Army Smokes in the Aerosol Wind Tunnel							
12. SUBJECT AREAS 07 02 Inorganic Chemistry; 07 03 Organic Chemistry; 06 06 Environmental Biology							
13. START DATE 84 04	14. ESTIMATED COMPLETION DATE 87 11		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 09	EXPIRATION 87 11		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 84PP4819							
c. TYPE PP	d. AMOUNT 645600		85		3.1		459
e. KIND OF AWARD EXT	f. CUM/TOTAL 1392744		86		6.5		646
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Battelle Northwest Laboratories			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 999 Richland, WA 99352			
c. NAME OF RESPONSIBLE INDIVIDUAL BARKLEY, J J				c. NAME OF PRINCIPAL INVESTIGATOR VAN VORIS, P			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 505-375-2498			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Smokes; (U) Wind Tunnel; (U) Fog Oil; (U) Ecological Effects; (U) Fate; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The objective of this research is to define the fate and ecological effects of military smoke derived from White Phosphorus/Felt and Red Phosphorus/Butyl Rubber.							
24. (U) The research approach will entail the generation of the three smokes individually in a wind tunnel under various meteorological conditions. The physical and chemical properties of the smokes will be assessed. The effect on plants and deposition rates will be determined.							
25. (U) 8502 - 8509. Efforts are complete for Phosphorus smokes. Some toxic effects were noted on all plants exposed to field relevant concentrations. The effects were most significant for broad leafed plants. Effects on the soils were similar to those associated with acid rain.							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA304532	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 01 07	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	014			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Water Quality Criteria for Six Munitions Compounds							
12. SUBJECT AREAS 19 01 Ammunition, Explosives and Pyrotechnics; 06 02 Bioengineering; 06 20 Toxicology							
13. START DATE 84 06	14. ESTIMATED COMPLETION DATE 87 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 10	EXPIRATION 87 03		FISCAL YEARS		a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER 84PP4845							
c. TYPE PP	d. AMOUNT -0-		84		2.5		150
e. KIND OF AWARD CON	f. CUM/TOTAL 350000		85		3.3		200
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Chemical Effects Information Center Oak Ridge National Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box X Oak Ridge, TN 37830				
c. NAME OF RESPONSIBLE INDIVIDUAL PARMER, D L			c. NAME OF PRINCIPAL INVESTIGATOR ROSS, R H				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 615-574-7797				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) ENSMINGER, J T g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Water Quality Criteria; (U) RDX; (U) Nitrocellulose; (U) Nitroglycerin; (U) White Phosphorus; (U) 2,4-Dinitrotoluene; (U) 2,4,6-TNT; (U) RAN III;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) PO							
<p>23. (U) The proposed research will summarize and evaluate the existing health and environmental effects and fate data on RDX, nitrocellulose, nitroglycerine, white phosphorus, 2,4-dinitrotoluene, and 2,4,6-trinitrotoluene. The summarized and evaluated data will be applied to water quality criteria methodologies developed by the US Environmental Protection Agency. Additionally, when necessary data are not available, research needs will be identified.</p> <p>24. (U) The proposed work will involve collection of reports, journal publications and proceedings of symposia with special attention to the work conducted in support of Army-related activities. For some of the compounds of interest, research is ongoing and contact with the appropriate researchers will be established to obtain the latest information. The information will be evaluated, summarized and when possible applied to water quality criteria methodologies.</p> <p>25. (U) 8501 - 8509. A draft report on water quality criteria for nitrocellulose was reviewed by USAMBRDL and returned to ORNL for finalization. A draft report on RDX is under review by USAMBRDL. A draft report on nitroglycerin was recently received.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DA305052	85 07 11	DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT	
85 03 06	D CHANGE	U	U		DX		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	015			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Environmental Fate of Nitroguanidine, Diethyleneglycol Dinitrate, and Hexachloroethane Smoke							
12. SUBJECT AREAS							
07 02 Inorganic Chemistry; 07 03 Organic Chemistry; 06 13, Microbiology							
13. START DATE	14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
84 09	86 02		DA		B Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	85 07	EXPIRATION	86 02	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER	DAMD17-84-C-4252						
c. TYPE	U	d. AMOUNT	21281	84	4.2	1	
e. KIND OF AWARD	SUP	f. CUM/TOTAL	348963	85	0.4	31	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME SRI International			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010				333 Ravenswood Avenue Menlo Park, CA 94025			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
KELLY, J A				SPANGGORD, R J			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-7207				415-326-6200			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Environmental Fate; (U) Chemical Transformation; (U) Biodegradation; (U) Zinc Chloride; (U) RAD III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To conduct laboratory experiments that will lead to the discovery and definition of the dominant environmental processes (chemical, physical, and biological) acting on the Army propellant components, nitroguanidine and diethyleneglycol dinitrate, upon their release into the aqueous environment. Also to be studied is hexachloroethane smoke and the combustion products, associated with its deployment, upon their discharge into the air, soil, and water environments.</p> <p>24. (U) A literature survey and laboratory screening studies shall comprise Phase I. If the literature data base in Phase I is found to be inadequate or any process screened is found to be significant in defining the degradation or transformation of these compounds, then appropriate rate studies shall be undertaken for this dominant process or processes in Phase II. Any rate data discovered in the literature survey or determined in Phase II shall input into a computer model of aqueous environmental fate of munition compounds or a computer simulation of environmental fate of smoke compounds. Definitive laboratory Phase II studies shall be accomplished only if data from Phase I warrant such studies. Performance of Phase II is at the option of the Government.</p> <p>25. (U) 8503 - 8507. Phase I Literature Review, analytical methods development, identification of screening study requirements and identification of smoke products have been completed. Sampling at Sunflower Army Ammunition Plant has been completed and screening studies are well underway.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA306060	85 10 01	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
85 01 07	D CHANGE	U	U		CX	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA	016		
b. CONTRIBUTING						
c. COMBIBUILDING	DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code)						
(U) The Fate of Selected Organic Pollutants During Landfill Disposal Operations						
12. SUBJECT AREAS						
06 09 Hygiene and Sanitation; 06 06 Environmental Biology						
13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING ORGANIZATION	16. PERFORMANCE METHOD			
84 12	86 03	DA	B Contract			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	84 12	EXPIRATION	86 03	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER	DAMD17-85-C-5024					
c. TYPE	S	d. AMOUNT	-0-	84	1.0	69
e. KIND OF AWARD	CON	f. CUM/TOTAL	72317	85	0.3	3
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Georgia Tech Research Institute School of Engineering			
b. ADDRESS (include zip code)			b. ADDRESS Georgia Institute of Technology			
Fort Detrick Frederick, MD 21701-5010			Atlanta, GA 30332			
c. NAME OF RESPONSIBLE INDIVIDUAL			c. NAME OF PRINCIPAL INVESTIGATOR			
BURROWS, W D			POHLAND, F G			
d. TELEPHONE NUMBER (include area code)			d. TELEPHONE NUMBER (include area code)			
301-663-7104			404-894-2265			
21. GENERAL USE			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable			GIABBAI, I			
MILITARY/CIVILIAN APPLICATION: H			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Hazardous Wastes; (U) Landfill; (U) Stabilization; (U) Fate; (U) Organic Pollutants; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
<p>23. (U) To determine the fate of selected hazardous wastes within landfill environments during phases of stabilization and to develop a landfill management protocol as a guide for determining the acceptability of such wastes at these disposal sites.</p> <p>24. (U) Simulated landfill cells will be constructed to permit conventional single-pass and leachate recycle operations. One cell will be made to operate with single-pass leaching of moisture to represent rainfall event, and the other with periodic recycle and leachate collection.</p> <p>25. (U) 8412 - 8509. Test cells have been in operation for 6 months. Both single-pass and leachate recycle cells have remained in the acid phase. With the exception of phenol and dibutyl phalate, seeded priority pollutants have not been detected in the leachate.</p>						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA306104	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 02 28	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	017			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Continuation of Field Ecological Assessment Procedures to Evaluate the Environmental Effects of Using Large Area Training Smokes							
12. SUBJECT AREAS 06 21 Weapons Effects; 19 01 Ammunition, Explosives and Pyrotechnics; 06 02 Bioengineering							
13. START DATE 84 09	14. ESTIMATED COMPLETION DATE 88 08		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 84 12	EXPIRATION 88 08		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 84PP4870							
c. TYPE PP	d. AMOUNT -0-		84	0.8	47		
e. KIND OF AWARD CON	f. CUM/TOTAL 202208		85	2.6	155		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Construction Engineering Research Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box 4005 Champaign, IL 61820				
c. NAME OF RESPONSIBLE INDIVIDUAL PARMER, D. L.			c. NAME OF PRINCIPAL INVESTIGATOR NOVAK, E.				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 217-352-6511				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Smokes & Obscurants; (U) Ecological Assessment; (U) Risk Assessment; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The proposed research will address the development of biological endpoints resulting from exposure to field concentrations of military smoke and obscurants. Additionally, large key factors will be evaluated to determine human effects potential.</p> <p>24. (U) Previous data collected on the observed genetic changes in the plant <u>Tradescantia</u> and wild rodents after field smoke exposures will be evaluated and a report published. Other published methods of evaluating environmental changes due to chemical stress will be screened to determine procedures applicable to evaluating field exposure to smokes. Use scenario, toxicology, chemical properties and other data will be collected in order to develop a risk assessment for human (general public) exposure.</p> <p>25. (U) 8412 - 8509. A workshop on the first report entitled "A Health Risk Assessment of the Use of Hexachloroethane Smoke on an Army Training Area" was held to review the risk assessment methodology in the report. The contractor is currently accomodating comments from the workshop. Two draft reports entitled "A Biological and Chemical Field Study of Obscurant Smokes at Ft. Irwin, CA" and "Effects of Training Pollutants on the Environment" have been reviewed and comments returned to CERL. A workshop on selection of field bioassessment methods is being planned.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA306401	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 22	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA		018		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) Development of a Theoretical Model to Assess the Hepatocarcinogenic Potential of Chemicals Using Structure-Activity Relationships and the Rat							
12. SUBJECT AREAS 06 01 Biochemistry; 06 13 Microbiology Hepatocyte Assay							
13. START DATE 85 02		14. ESTIMATED COMPLETION DATE 85 11		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 03		EXPIRATION 85 11		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER DAMD17-85-C-5016						b. FUNDS (In thousands)	
c. TYPE U		d. AMOUNT -0-		84		0.4	
e. KIND OF AWARD CON		f. CUM/TOTAL 34543		85		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME SRI International, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 333 Ravenswood Avenue Menlo Park, CA 94025			
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENBLATT, D H				c. NAME OF PRINCIPAL INVESTIGATOR SPANGGORD, R J			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 415-859-3822			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Cytotoxicity; (U) Hepatocarcinogenicity; (U) Hepatocyte Assay; (U) Model; (U) Structure-Activity Relationship (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objective is to develop a predictive laboratory model for hepatocarcinogenicity based on chemical structure and biological response using in vitro techniques and the six isomeric DNT's.</p> <p>24. (U) The approach will utilize established laboratory in vitro methods to determine the cytotoxic potential of six DNT isomers using isolated rat hepatocyte suspensions. DNT metabolites produced by hepatocytes and cecal microflora will be assayed to determine if these contribute to the measured cytotoxicity. The cytotoxic potentials of the DNT's will be correlated to their molecular quantum mechanical properties. The cytotoxic effects to be assayed include LDH release, lipid peroxidation and protein synthesis.</p> <p>25. (U) 8503 - 8509. Analytical methods for DNTs and their metabolites in biological materials were developed. Cytotoxicity was demonstrated by the release of LDH and by the inhibition of protein synthesis. DNT isomers in which nitro groups were meta to each other were considerably less toxic than those where nitro groups were ortho or para to each other.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 306599	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 08	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N EP	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62720A	3E162720A835	AA	019		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code) (U) Environmental Effect Studies on EA5763							
12. SUBJECT AREAS 06 06 Environmental Biology; 07 02 Inorganic Chemistry; 07 04 Physical Chemistry							
13. START DATE 84 02		14. ESTIMATED COMPLETION DATE 86 01		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 09		EXPIRATION 86 01		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER		84 PP 4804				b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		85		2.0	
e. KIND OF AWARD CON		f. CUM/TOTAL 229441		86		0.2	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Armament Munitions & Chemical Command			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Chemical Research & Development Center Aberdeen Proving Ground, MD 21010			
c. NAME OF RESPONSIBLE INDIVIDUAL GARDNER, H S				c. NAME OF PRINCIPAL INVESTIGATOR WENTSEL, R S			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 301-671-3318			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Environmental Fate; (U) Ecological Effects; <del>(U) Screening Smoke; (U) Terrestrial Effects; (U) Fish; (U) RAD III; (U) PO</del>							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The objective of this study is to develop baseline environmental data on the screening smoke composition, EA5763.							
24. (U) The research will address the fate of EA5763 in soil and water, the toxicity to terrestrial plants and soil organisms and the toxicity of the material to fish and aquatic invertebrates. EA5763 will be characterized as will its degraded products in aquatic systems. Nutrient loss, plant productivity, and trace element uptake will be monitored.							
25. (U) 8502 - 8510. Progress to date includes the completion of soil toxicity, aquatic fate and surface microlayer research. The completion of the soil column research is eminent and the aquatic toxicology work should be finished within 45 days. Draft final reports are currently undergoing review.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA307948	2. DATE OF SUMMARY 85 08 26	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY A NEW	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N NL	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	020			
b. CONTRIBUTING							
c. <del>CONDOR/RECORDING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Health Advisories on Munition Chemicals							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 85 07	14. ESTIMATED COMPLETION DATE 88 04		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 07	EXPIRATION 88 04		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 85PP5869							
c. TYPE PP	d. AMOUNT 200000		84	0.0	00		
e. KIND OF AWARD NEW	f. CUM/TOTAL 200000		85	4.0	200		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Environmental Protection Agency				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS 401 M Street Washington, DC 20460				
c. NAME OF RESPONSIBLE INDIVIDUAL ROBERTS, W C			c. NAME OF PRINCIPAL INVESTIGATOR KHANNA, K				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 202-382-7588				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: U			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Health Advisory; (U) Environmental Contaminants; (U) Drinking Water Quality; (U) Pollution Abatement; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Develop health advisories for drinking water contaminants and, when feasible, address the effects of mixtures of contaminants. Define significant data deficiencies or problem areas that prevent preparation of meaningful advisories and provide such information along with recommendations for appropriate data base development which will allow future preparation of advisories.</p> <p>24. (U) Available literature will be reviewed and summarized by the Army. The summary and appropriate references will be provided to USEPA along with recommended exposure criteria. EPA will review the summaries and use them to further develop and publish health advisories.</p> <p>25. (U) None.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA302715	2. DATE OF SUMMARY 85 07 03	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 05	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PR. MARY		62720A	3E162720A835	AA	021		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Methods for Estimating Physicochemical Properties of Inorganic Chemicals of Environmental Concern							
12. SUBJECT AREAS 07 02 Inorganic Chemistry; 08 04 Geochemistry							
13. START DATE 83 09		14. ESTIMATED COMPLETION DATE 86 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 07		EXPIRATION 86 06		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER DAMD17-83-C-3274						b. FUNDS (In thousands)	
c. TYPE U		d. AMOUNT 92600		84		1.3	
e. KIND OF AWARD CON		f. CUM/TOTAL 632807		85		2.3	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Arthur D. Little, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Acorn Park Cambridge, MA 02140			
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENBLATT, D H				c. NAME OF PRINCIPAL INVESTIGATOR LYMAN, W J			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 617-864-5770, Ext. 2329			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) BODEK, I			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Estimation Methods; (U) Chemical Properties; (U) Inorganic Compounds; (U) Environmental; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To compile methods for estimating those physicochemical properties of inorganic and organometallic compounds that are needed in modeling the environmental behavior of such compounds. These methods will help plan military installation restoration.</p> <p>24. (U) The most useful physicochemical properties will be identified, especially those required in environmental fate predictive models, in hazard ranking systems, and in Federal regulations. Those not amenable to estimation will be eliminated. Methods for estimating the relevant properties will be assembled, and sample problems presented and solved with various possible combinations of initial information. A comprehensive manual will then be assembled in a reasonable and consistent format. The methods described will permit rapid estimation of properties of concern and thereby facilitate studies of the chemicals of concern for such purposes as chemical fate modeling, exposure assessments, priority ranking of lists of chemicals, and process design. The most important references to the literature will be included. Thru July 1985, a total of \$59,983 of reimbursable funds have been applied to this contract.</p> <p>25. (U) 8412 - 8507. Drafts of several chapters have been written and are undergoing review.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 308762	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	022			
b. CONTRIBUTING							
c. <del>COORDINATING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Fish Pathology Workshop							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 85 06	14. ESTIMATED COMPLETION DATE 85 12	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 06		EXPIRATION 85 12		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 85PP5859				85 86	0.5 0.0	25 00	
c. TYPE PP		d. AMOUNT - 0 -					
e. KIND OF AWARD CON		f. CUM/TOTAL 25000					
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME National Cancer Institute Blair Building			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 8300 Colesville Road Silver Spring, MD 20910			
c. NAME OF RESPONSIBLE INDIVIDUAL HENRY, M C				c. NAME OF PRINCIPAL INVESTIGATOR CAMERON, T R			
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 301-496-1895			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Carcinogens; (U) Pathology; (U) Fish Neoplasia; (U) Animal Models; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) This project is a study to improve and standardize the present status of fish pathology nomenclature.							
24. (U) A workshop will be held, bringing together scientific experts in fish and mammalian histology and pathology. Histologic lesions in fin fish and shellfish will be reviewed and concensers on the nomenclature for the different types of lesions will be sought. The deliberations and conclusions of the experts will be published in a fish pathology atlas.							
25. (U) 8505 - 8509. A coordination meeting was held to outline the areas to be covered in the workshop and the schedule for preparation of reports.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA 309009	85 10 01	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
85 06 18	D CHANGE	U	U	NA	CX	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA	023		
b. CONTRIBUTING						
c. COMPLEMENTING	DA LRRDAP, FY 86-01					
11. TITLE (Precede with Security Classification Code) (U) Support for Grant Entitled "Development of Software for Genetic Toxicology Data Management"						
12. SUBJECT AREAS						
06 02 Toxicology; 06 06 Environmental Biology						
13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
85 07	86 06	DA		D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE 85 07		EXPIRATION 86 06		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER		85PP5864				
c. TYPE	PP	d. AMOUNT	-0-	84	0.0	00
e. KIND OF AWARD	CON	f. CUM/TOTAL	50000	85	0.5	50
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Environmental Protection Agency		
b. ADDRESS (include zip code)				ATTN: EMSL-LV		
Fort Detrick				P.O. Box 15027		
Frederick, MD 21701-5010				Las Vegas, NV 89114		
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR		
BARKLEY, J J				WILLIAMS, L R		
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)		
301-663-2014				702-798-2138		
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
Foreign Intelligence Not Applicable				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
MILITARY/CIVILIAN APPLICATION: H						
22. KEYWORDS (Precede EACH with Security Classification Code)						
(U) Software; (U) Data Management; (U) Genetic Toxicology; (U) PO; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) The objectives are to: (a) evaluate existing statistical models that are being used to analyze genetic toxicology data; (b) recommend appropriate methods for data management; and (c) prepare software program(s) using the recommended data management system.						
24. (U) Genetic test systems recommended by EPA will be evaluated. A literature data base will be gathered. By use of three expert panels consisting of genotoxicologist, biometricians and computer programmers, the gathered data will be evaluated; the data management system will be developed; and the software program will be written.						
25. (U) None.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA306024	2. DATE OF SUMMARY 85 09 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 12 11	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	024			
b. CONTRIBUTING	61102A	3E161102BS04	AA	047			
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Estimation of Melting Point							
12. SUBJECT AREAS 07 04 Physical Chemistry; 07 02 Inorganic Chemistry; 06 09 Hygiene & Sanitation							
13. START DATE 84 11	14. ESTIMATED COMPLETION DATE 88 04	15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD B Contract				
17. CONTRACT/GRANT		18. RESOURCES ESTIMATE					
a. DATE EFFECTIVE 85 09	EXPIRATION 88 04	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)			
b. CONTRACT/GRANT NUMBER DAMD17-85-C-5005		85	1.3	00			
c. TYPE S	d. AMOUNT 51929	86	1.3	52			
e. KIND OF AWARD SUP	f. CUM/TOTAL 100460						
19. RESPONSIBLE DOD ORGANIZATION		20. PERFORMING ORGANIZATION					
a. NAME US Army Medical Bioengineering Research & Development Laboratory		a. NAME The University of Arizona Room 601					
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010		b. ADDRESS Administrative Building Tucson, AZ 85721					
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENBLATT, D H		c. NAME OF PRINCIPAL INVESTIGATOR YALKOWSKY, S H					
d. TELEPHONE NUMBER (include area code) 301-663-2014		d. TELEPHONE NUMBER (include area code) 602-626-1289					
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L		f. NAME OF ASSOCIATE INVESTIGATOR (if available)					
		g. NAME OF ASSOCIATE INVESTIGATOR (if available)					
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Melting Point; (U) Enthalpy of Fusion; (U) Estimation; (U) Entropy of Fusion; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Technical Objective: To determine which molecular properties contribute most significantly to melting point and to develop techniques by which the melting point of organic compounds can be estimated on the basis of their chemical structure.</p> <p>24. (U) Approach: The thermodynamics of melting, i.e. melting point and enthalpy of fusion, will be determined for 50-100 compounds in five classes. The enthalpies of fusion will be correlated with a number of estimable parameters to produce a regression with the best possible fit(s). Similarly entropies of fusion (determined from enthalpies of fusion and melting points) will be correlated with appropriate properties to provide a predictive equation (or equations). Once the relationships have been defined, the melting points (degrees Kelvin) can be calculated as the ratios of enthalpy of fusion to entropy of fusion. The estimated melting points and entropies of fusion will be used in the estimation of the vapor pressure and the ideal solubility.</p> <p>25. (U) 8412 - 8509. The melting points and heats of fusion of a number of aromatic compounds with rigid molecular structures have been determined experimentally. Melting points of a considerably larger number of compounds in this class (about 560) have been obtained from the literature and entered into a computer database. The database also contains molecular lengths and can compute polarizability, Van der Waals volume, and sums of bond dipole and group dipole moments.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA307134	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 20	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62720A	3E162720A835	AA	025		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code) (U) Toxicity of DECDN, Synthetic-HC Smoke Combustion Products, Solvent Yellow 33 and Solvent Green 3 to Freshwater Aquatic Organisms							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 20 Toxicology							
13. START DATE 84 11		14. ESTIMATED COMPLETION DATE 86 04		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 11		EXPIRATION 86 04		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER 85MM5505						b. FUNDS (In thousands)	
c. TYPE MIPR		d. AMOUNT -0-		84		0.0	
e. KIND OF AWARD CON		f. CUM/TOTAL 151900		85		0.8	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Naval Sea Systems Command Department of the Navy			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS ATTN: Code (SEA-62R25) Crystal Plaza #6 (CP-6), Rm. 806 Washington, DC 20362			
c. NAME OF RESPONSIBLE INDIVIDUAL KELLY, J A				c. NAME OF PRINCIPAL INVESTIGATOR BURTON, D T			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 301-867-7000			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Toxicology; (U) Dyes; (U) Smokes; (U) Fish; (U) Lab Animals; (U) Military Propellant; (U) RAM III; (U) MIPR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To determine the acute toxicity of DECDN, synthetic-HC smoke combustion products, Solvent Yellow 33 and Solvent Green 3 to freshwater aquatic organisms.							
24. (U) The research will consist of two Phases. In Phase I, existing analytical methods will be adopted for measuring concentrations of the materials in water. Phase II will determine the acute toxicity of the four compounds to freshwater fish, invertebrates, and a green alga. Thru Sep 1985 a total of \$94,950 of reimbursable funds had been applied to this MIPR.							
25. (U) 8411 - 8509. Progress for this period included: (1) literature review; (2) procurement of test materials; and (3) the development of analytical methods.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA300877	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA		039		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Data Base Assessment of Health and Environmental Effects of Munition Production Waste Products							
12. SUBJECT AREAS 19 01 Ammun Exp Pyrot; 05 02 Documentation and Information Technology; 07 03 Org Chem							
13. START DATE 82 10		14. ESTIMATED COMPLETION DATE 85 11		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 02		EXPIRATION 85 11		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER		83PP3802				b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		0.6	
e. KIND OF AWARD CON		f. CUM/TOTAL 257000		85		0.2	
						121	
						15	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Oak Ridge National Laboratory Department of Energy			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Post Office Box X Oak Ridge, TN 37830			
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENCRANCE, A B				c. NAME OF PRINCIPAL INVESTIGATOR ROSS, R H			
d. TELEPHONE NUMBER (include area code) 301-663-2340				d. TELEPHONE NUMBER (include area code) 615-574-7797			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Solid Wastes; (U) Pollution Control; (U) Data Assessment; (U) Munitions; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objectives of this research are: (a) to establish and assess the literature data base on the improvements in the technology of munition plant waste treatment over the last decade, and (b) to collect the existing and/or proposed federal, state, and local regulations as they apply to munition plant wastes.</p> <p>24. (U) The approach will involve collection of recent reports in the open literature, particularly status reports from Army ammunition plants. On-site visits will be made; latest technological developments will be discussed; and regulatory aspects will be thoroughly investigated.</p> <p>25. (U) 8502 - 8509. A three month extension and additional funding (15K) have been granted for completion of the final report. The draft final report on the task of collecting the existing and/or proposed Federal, state and local regulations as they apply to munition plant wastes has been received, reviewed and returned. Expect to receive final report in the first quarter of FY86.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DAOG2232	85 10 01	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
85 02 14	D CHANGE	U	U		DX	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER	
a. PRIMARY		62720A	3E162720A835	AA	055	
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01			
11. TITLE (Precede with Security Classification Code) (U) Determination of the Toxicity to Aquatic Organisms of HMX and Related Wastewater Constituents						
12. SUBJECT AREAS						
06 06 Environmental Biology; 06 20 Toxicology						
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD
80 02		85 10		DA		B Contract
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE		85 01		EXPIRATION		85 10
b. CONTRACT/GRANT NUMBER		DAMD17-80-C-0011				
c. TYPE		U		d. AMOUNT		-0-
e. KIND OF AWARD		CON		f. CUM/TOTAL		768922
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME EG&G International, Inc. Bionomics Division		
b. ADDRESS (include zip code)				b. ADDRESS		
Fort Detrick Frederick, MD 21701-5010				790 Main Street Wareham, MA 02571		
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR		
van der SCHALIE, W H				PETROCELLI, S R		
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)		
301-663-7627				617-295-2550		
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
Foreign Intelligence Not Applicable				FOSTER, R B		
MILITARY/CIVILIAN APPLICATION: H				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code) (U) HMX; (U) SEX; (U) TAX; (U) Munitions; (U) Lab Animals; (U) Fish; (U) Aquatic Toxicology; (U) Wastewater; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) Determine the effects of Army Ammunition Plant water pollutants (HMX, SEX, and TAX) on aquatic organisms. Provide aquatic toxicological data for the development of effluent standards for these compounds from Army Ammunition Plants.						
24. (U) Conduct laboratory toxicity tests on a wide variety of aquatic organisms, including fish, macroinvertebrates, and algae. Static tests with both fish and invertebrates will be performed; further longer-term tests will also be done if the toxicity of the test materials is sufficiently high. Test methodology for the aquatic invertebrate <u>Daphnia magna</u> will be developed as necessary to ensure accurate, repeatable results. Data will be used to calculate water quality criteria according to the 1977 Clean Water Act (and subsequent modifications). Thru Sep 1985, a total of \$179,900 of reimbursable funds from the US Environmental Protection Agency had been applied to this contract.						
25. (U) 8412 - 8509. Interlaboratory testing of a chronic <u>Daphnia magna</u> toxicity testing protocol has been completed. A total of 11 laboratories participated, and the test protocol was far more successful than any previous collaboratively-tested daphnid chronic test method. This test method can be used as part of the environmental hazard evaluation process for Army-relevant materials.						

AD-A170 604

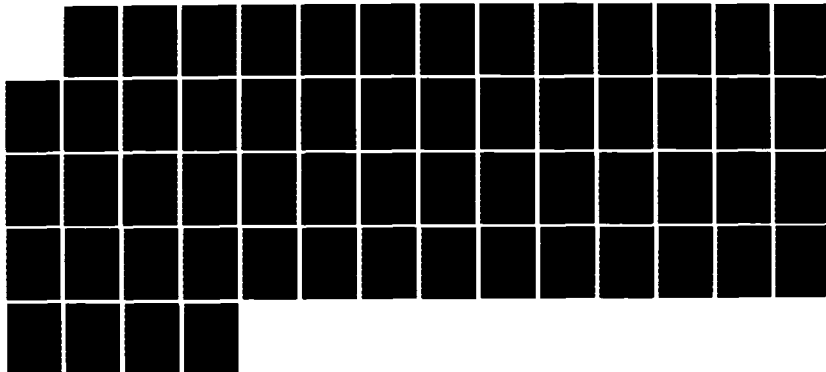
US ARMY MEDICAL BIOENGINEERING RESEARCH AND DEVELOPMENT 2/2  
LABORATORY ANNUAL (U) ARMY MEDICAL BIOENGINEERING  
RESEARCH AND DEVELOPMENT LAB FORT. C E PEDERSEN

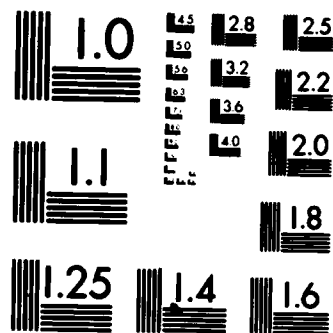
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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA300090	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 02 14	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	059			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Dermal, Eye and Oral Toxicologic Evaluations							
12. SUBJECT AREAS 06 06 Environmental Biology; 06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE 82 09	14. ESTIMATED COMPLETION DATE 86 01		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 84 12	EXPIRATION 86 01		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER DAMD17-82-C-2301							
c. TYPE J	d. AMOUNT -0-		84		0.4	00	
e. KIND OF AWARD CON	f. CUM/TOTAL 240649		85		0.0	00	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Bioassay Systems Corporation				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS 225 Wildwood Avenue Woburn, MA 01801				
c. NAME OF RESPONSIBLE INDIVIDUAL REDDY, G			c. NAME OF PRINCIPAL INVESTIGATOR MUNI, I A				
d. TELEPHONE NUMBER (include area code) 301-663-7104			d. TELEPHONE NUMBER (include area code) 617-933-9229				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Wood Preservatives; (U) Smoke/Obscurants; (U) Mammalian Toxicology; (U) Environmental Biology; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) Definition of the acute and subacute toxicity of 15 compounds.							
24. (U) The acute toxicity of military relevant compounds will be determined in oral and dermal toxicity tests, skin and eye irritation tests and skin sensitization potential. These compounds will be evaluated for subacute dermal toxicity.							
25. (U) 8501 - 8509. Final Phase II report on Solvent Yellow, Solvent Green, SEX and other chemicals are completed. Toxicological evaluations of Fog Oil, Diesel Fuel, and Copper Zinc Powder individually and in combination; Fog Oil and Copper Zinc Powder, (0.75:1 and Diesel Fuel and Copper Zinc Powder (0.7:1) are in progress. Chemicals Disperse Red II Lot 1 and 2, Disperse Blue 3 and Solvent Red I, are being shipped for toxicological evaluation.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA300100	85 09 30	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
84 10 09	H TERM	U	U		CX	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62720A	3E162720A835	AA	075		
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code)(U) Environmental Fate Studies of White Phosphorus/ Felt and Red Phosphorus/Butyl Rubber Military Screening Smokes						
12. SUBJECT AREAS						
06 13 Microbiology; 07 02 Inorganic Chemistry; 19 01 Ammunition, explosives, and pyrotechnic						
13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
82 09	85 01	DA		B Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE 84 07		EXPIRATION 85 01		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER DAMD17-82-C-2320						
c. TYPE U	d. AMOUNT -0-		84	0.0		7
e. KIND OF AWARD CON	f. CUM/TOTAL 679661		85	0.0		0
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME SRI, International		
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 333 Ravenswood Avenue  Menlo Park, CA 94025		
c. NAME OF RESPONSIBLE INDIVIDUAL BARKLEY, J J				c. NAME OF PRINCIPAL INVESTIGATOR SPANGGORD, R J		
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 415-326-6200		
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code)						
(U) Environmental Fate; (U) Phosphorus; (U) Screening Smoke; (U) RAD III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) To provide laboratory data on the environmental fate of WP/F, RP/BR, and products of their manufacture and deployment, and to input appropriate rate constants defining the significant pathways into a computer simulation of environmental fate.						
24. (U) In Phase I, to perform a literature search for information pertaining to WP/F and RP/BR. In Phase II, to create a scale model of deployment, to gather field samples and to determine significant degradative pathways. In Phase III, determine kinetic rate constants of dominant environmental pathways and to create an air, soil, and water computer simulation using data gathered.						
25. (U) 8407-8509. The Phase I literature search Final Report has been completed. Phase II (laboratory studies) is complete. Oxidation and hydrolysis were found to be the most significant environmental pathways. Final report awaits contractor printing.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DAOG0666	85 10 01	DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT	
84 10 29	H TERM	U	U		CX		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62720A	3E162720A835	AA	094			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code)							
(U) Determination of the Chronic Mammalian Toxicological Effects of TNT							
12. SUBJECT AREAS							
06 15 Pharmacology; 19 01 Ammunition, explosives, and pyrotechnics							
13. START DATE	14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
79 09	85 01		DA		B Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 07		EXPIRATION 85 01		FISCAL YEARS	a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER		DAMD17-79-C-9120					
c. TYPE U	d. AMOUNT -0-			84	0.4		167
e. KIND OF AWARD CON	f. CUM/TOTAL 2299800			85	0.4		00
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME IIT Research Institute			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick				10 West 35th Street			
Frederick, MD 21701-5010				Chicago, IL 60616			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
REDDY, G				LISH, P M			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-7104				312-567-4874			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
MILITARY/CIVILIAN APPLICATION: L							
22. KEYWORDS (Precede EACH with Security Classification Code) (U) TNT; (U) Toxicity; (U) Mammalian; (U) Chronic; (U) Carcinogenicity; (U) Lab Animals; (U) Rats; (U) Dogs; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To determine the chronic mammalian toxicity and carcinogenicity of TNT to provide data for the development of effluent guidelines for TNT from Army-owned ammunition plants.</p> <p>24. (U) Studies will be performed to determine the chemical-biological interaction of TNT for chronic exposures to mammals. This will include assessments for carcinogenicity and teratogenicity. Also, detailed metabolic studies will be conducted to identify target organs.</p> <p>25. (U) 8407 - 8509. The subchronic toxicity of TNT for rats has been defined. A 30-day range-finding feeding study and a six-month dog feeding study have been completed. Lifetime rat and mouse feedings are completed. Draft final report has been received and is being reviewed.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA307558	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 07 08	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BT	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES.	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62770A	3M162770A870	AV	181			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Testing of the USAMBRDL Collapsible Light Trap in Panama							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0606 Environmental biology							
13. START DATE 85 06	14. ESTIMATED COMPLETION DATE 86 05		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D. Other Gov't		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 10	EXPIRATION 86 05		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 85PP5856							
c. TYPE pp	d. AMOUNT 0		85		1.0		7
e. KIND OF AWARD CON	f. CUM. TOTAL \$10,250		86		0.5		3
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Medical Department Activity, Panama				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Entomology Branch Preventive Medicine Service APO Miami 34004				
c. NAME OF RESPONSIBLE INDIVIDUAL Boobar, L R			c. NAME OF PRINCIPAL INVESTIGATOR Lawson, M A				
d. TELEPHONE NUMBER (include area code) 301-663-7237			d. TELEPHONE NUMBER (include area code) 313-285-5602 (Panama)				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Vector; (U) Mosquito; (U) Light Trap; (U) RAM I; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To determine effectiveness of US Army Medical Bioengineering Research and Development Laboratory (USAMBRDL) Trap, Mosquito, Light, Collapsible. Testing will determine whether new trap is as effective or more effective for surveillance of mosquitoes and sand flies than the standard New Jersey Light Trap.</p> <p>24. (U) A comparative evaluation will be conducted of the USAMBRDL developed collapsible light trap with the New Jersey Light Trap in paired tests under tropical conditions in Panama. Tests will be conducted in field areas with high mosquito densities where mosquito control programs will not influence the catch. Variables to be evaluated will include: (a) Seasonality (wet versus dry season); (b) Type of light source (incandescent versus ultraviolet light); (c) Effect of CO<sub>2</sub> supplement (with and without CO<sub>2</sub> bait). While mosquitoes will be the main target group, light trap collections of psychodidae (phlebotomine sand flies) and ceratopogonidae (punkies, sand flies, or "no-see-ums") will also be compared. Durability of the two designs under tropical conditions and generator (power source) operation will be determined.</p> <p>25. (U) (8506-8510) Light traps have been shipped to Panama, and testing is expected to begin 1st Quarter FY 86.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG9379	2. DATE OF SUMMARY 85 09 27	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 22	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62772A	3S162772A874	BA	260			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Flywheel-Powered Mobile X-Ray Generator with Fluoroscopic Capability							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0602 Bioengineering							
13. START DATE 82 01	14. ESTIMATED COMPLETION DATE 85 10		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	85 09	EXPIRATION	85 10	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER	DAMD17-82-C-2050			84	0.0	0	
c. TYPE	S	d. AMOUNT	0	85	0.2	82	
e. KIND OF AWARD	CON	f. CUM/TOTAL	\$344,006				
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Instrumentation Systems Center University of Wisconsin			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 750 University Avenue Madison, WI 53706			
c. NAME OF RESPONSIBLE INDIVIDUAL Salisbury, L L				c. NAME OF PRINCIPAL INVESTIGATOR Siedband, M P			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 608-263-1552			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) X-ray; (U) Flywheel-Powered; (U) Energy Storage; (U) Bioengineering; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a flywheel-powered mobile X-ray system for clinical and field evaluation.							
24. (U) Using the low duty cycle requirements of an X-ray system, it is intended to store energy in a motor-generator-flywheel combination to reduce the peak energy demands from the main power source.							
25. (U) (8505-8509) A laboratory prototype has been delivered. However, this time extension is necessary for examining the data and finishing the final report.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA306952	2. DATE OF SUMMARY 85 09 23	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 12	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT 62777A	PROJECT NUMBER 3E162777A878	TASK AREA NUMBER CA	WORK UNIT NUMBER 281			
a. PRIMARY							
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Field Sampling and Analysis of Shale Oil Derived Airborne Diesel Exhausts							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology; 06 06 Environmental Biology							
13. START DATE 84 08	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 04		EXPIRATION 86 09		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 84PP4867				85	0.5	78	
c. TYPE PP		d. AMOUNT -0-		86	1.0	00	
e. KIND OF AWARD CON				f. CUM/TOTAL 98000			
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Department of Energy Oak Ridge Operations			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Box X Oak Ridge, TN 37831			
c. NAME OF RESPONSIBLE INDIVIDUAL EATON, J C				c. NAME OF PRINCIPAL INVESTIGATOR GUERIN, M R			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 615-574-4862			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Shale Oil; (U) Diesel Fuel; (U) Chemical Characterization; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) This research is designed to comparatively characterize petroleum vs. shale derived diesel exhaust from military vehicles. This characterization will provide an actual field link to future laboratory inhalation toxicology studies done on these compounds.							
24. (U) Field measurements are made of the exhaust from various military engines while burning petroleum derived fuel. These same engine exhausts are subsequently sampled when the installation has converted to shale derived diesel fuel.							
25. (U) 8504 - 8510. Analysis of both parent fuels and exhaust products has been accomplished. A significant cross contamination between vehicle fuel and crankcase oil seems to be occurring. Area samples of motor pools has also been accomplished.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DAOH0386	85 10 01	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
85 05 20	D CHANGE	U	U		CX	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62777A	3E162777A878	CA	282		
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code) (U) Research and Development on Inhalation Toxicologic Evaluation of Red Phosphorus/Butyl Rubber Combustion Products						
12. SUBJECT AREAS						
06 10 Industrial (occupational) Medicine; 06 20 Toxicology						
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD
82 05		86 09		DA		B Contract
17. CONTRACT GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE 85 04		EXPIRATION 86 09				
b. CONTRACT GRANT NUMBER DAMD17-82-C-2121				FISCAL YEARS		
c. TYPE U		d. AMOUNT -0-		a. PROFESSIONAL WORK YEARS		
				b. FUNDS (In thousands)		
e. KIND OF AWARD CON		f. CUM TOTAL 2003890		84 4.2 360		
				85 2.7 242		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME IIT Research Institute		
b. ADDRESS (include zip code)				b. ADDRESS		
Fort Detrick Frederick, MD 21701-5010				10 West 35th Street Chicago, IL 60616		
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR		
FINCH, R A				ARANYI, C		
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)		
301-663-7104				312-567-4864		
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
Foreign Intelligence Not Applicable				FENTERS, J		
MILITARY CIVILIAN APPLICATION H				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Red Phosphorus/Butyl Rubber; (U) Smoke; (U) Obscurants; (U) Mammalian Toxicology; (U) RAM III; (U) Lab Animals; (U) Rats						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) Comprehensive definition of the toxicologic effects of inhalation of red phosphorus/butyl rubber screening smoke.						
24. (U) Sprague-Dawley rats will be exposed to aerosols of red phosphorus/butyl rubber smoke in whole body, dynamic flow exposure chambers. The four phases of the study include determination of LC50 at two time periods, range-finding study for repeated exposures, biologic effects of various intermittent repeated exposure regimens, and 13 week exposures with 4 to 8 week recovery using one or two repeated exposure regimens. The genotoxic potential of the red phosphorus/butyl rubber combustion products will be tested using the In Vitro DNA Repair Assay in Primary Rat Hepatocytes, the Ames Test <u>Salmonella typhimurium</u> Reverse Mutation Assay, and the In Vitro Chromosome Aberration Test in CHO cells. Thru Sep 1985, a total of \$306,644 of reimbursable funds have been applied to this contract.						
25. (U) 8505 - 8509. The first 90-day subchronic study is completed and data reduction is in progress. A second 90-day subchronic study to establish a NOAEL and to examine in more detail fibrotic changes observed in the first 90-day subchronic study has been initiated. An Ames test, a chromosome aberration assay, and an DNA repair assay have been completed.						

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1 AGENCY ACCESSION DA301721	2 DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 22	4. KIND OF SUMMARY H TERM	5. SUMMARY SCTY U	6. WORK SECURITY U	7 REGRADING	8 DISB'N INSTR'N CX	9 LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	283			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Literature Assessment of the Occupational Health Effects of Selected Trichothecene Mycotoxins of Military Medical Significance							
12 SUBJECT AREAS 06 20 Toxicology; 07 03 Organic Chemistry; 06 13 Microbiology							
13 START DATE 83 06	14 ESTIMATED COMPLETION DATE 84 07		15 FUNDING ORGANIZATION DA	16 PERFORMANCE METHOD B Contract			
17 CONTRACT GRANT			18 RESOURCES ESTIMATE				
a. DATE EFFECTIVE 83 06 EXPIRATION 84 07			FISCAL YEARS		a. PROFESSIONAL WORK YEARS		b. FUNDS (In thousands)
b. CONTRACT GRANT NUMBER DAMD17-83-C-3178							
c. TYPE			84		0.0		00
e. KIND OF AWARD CON			85		0.0		00
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Carltech Associates				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box 1158 Columbia, MD 21044				
c. NAME OF RESPONSIBLE INDIVIDUAL BAUSUM, H T			c. NAME OF PRINCIPAL INVESTIGATOR UHRMACHER, J C				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 301-596-5912				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION H			f. NAME OF ASSOCIATE INVESTIGATOR (if available) GARDNER, N H				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22 KEYWORDS (Precede EACH with Security Classification Code) (U) Occupational Health; (U) Fungi; (U) Toxicology; (U) Trichothecenes; (U) Mycotoxins; (U) RAM III							
23 TECHNICAL OBJECTIVE 24 APPROACH 25 PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The study will obtain, organize, and critically evaluate published data on 5 trichothecene mycotoxins and present them in a useful compilation. This will aid in the identification of areas most in need of research and will contribute to the later development of field and laboratory exposure standards.</p> <p>24. (U) Available information will be obtained by searches of at least six computerized data bases and extensive manual searches. Foreign literature will be included. Areas covered will include occurrence, properties, synthesis, fungal culture, toxicology, pharmacology, pathology, human exposure, commercial availability, and detection. Only toxicologic information will be covered in depth, with older literature included, and critically evaluated. This will include genotoxicity, carcinogenicity, and teratogenicity, human and primate toxicology of T2/HT2 and human and mammalian toxicology of diacetoxyscirpenol, deoxynivalenol, and verrucaric acid. Data gaps will be identified. Outside consultants in medical mycology will be utilized. A usable compilation, organized by compound, will be prepared.</p> <p>25. (U) 8504-8509. Draft final report was received, and is undergoing intensive review inhouse and extramurally.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303278	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO. CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	284			
b. CONTRIBUTING	65804A	3P665804M802	CA	167			
c. <del>CONVINCING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Rapid Bioassay Monitoring System for Water Quality - Phase 2, Tasks 2-12							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology; 06 09 Hygiene and Sanitation							
13. START DATE 84 04	14. ESTIMATED COMPLETION DATE 86 01		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD B Contract			
17. CONTRACT GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 09   EXPIRATION 86 01			FISCAL YEARS   PROFESSIONAL WORK YEARS   b. FUNDS (In thousands)				
b. CONTRACT GRANT NUMBER DAMD17-84-C-4155							
c. TYPE U   d. AMOUNT -0-			84 3.1 176				
e. KIND OF AWARD CON   f. CUM TOTAL 370354			85 3.0 174				
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Wyatt Technology Corporation			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 820 East Haley Street Santa Barbara, CA 93130			
c. NAME OF RESPONSIBLE INDIVIDUAL SCHAUB, S A				c. NAME OF PRINCIPAL INVESTIGATOR WYATT, P J			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 805-963-5904			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEY WORDS (Precede each with Security Classification Code) (U) Toxicity; (U) Bioassay; (U) Potable Water; (U) Bacteria; (U) Laser Light Scattering; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Study will develop, fabricate and test a breadboard Differential Laser Light Scattering (DLS) system to evaluate the field efficacy of the microbiological bioassay monitoring technology for detection of waterborne toxicants at human toxic threshold levels.</p> <p>24. (U) The DLS concept will be modified for potential Army field use considerations. The use of Dual Angle Weighted Nephelometry (DAWN) will be evaluated for improved accuracy and speed in determining microbiological assay strain responses to toxicants. Methods of storing and using bacterial spores and lyophilized vegetative cells for short term field use will also be evaluated. A battery of extensive tests will be performed to further define microbial DLS responses to toxicants and non-toxic chemicals. A batch breadboard DLS system will be engineered, fabricated, and evaluated for its potential field utility as a biotoxicity monitor.</p> <p>25. (U) 8505 - 8509. Two breadboard DLS units have been designed and fabricated for use in advanced feasibility studies. New toxicity response algorithms have been developed for use of onboard computers with the DAWN approach. A method of preparing Lyophils which contains test organisms and media and which provides cultures for assay within 2 hours after hydration and incubation has been developed. New assay protocols have been established which will be used in dual laboratory toxicity response studies. DLS read heads have been improved and incubator blocs designed.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1 AGENCY ACCESSION	2 DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DAOG 7492	85 10 01	DD-DR&E(AR) 636	
3 DATE PREV SUMMARY	4 KIND OF SUMMARY	5 SUMMARY SCTY	6 WORK SECURITY	7 REGRADING	8 DISB N INSTR N	9 LEVEL OF SUM A WORK UNIT	
85 04 02	D CHANGE	U	U		CX		
10. NO./CODES		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62777A	3E162777A878	CA	285		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code)							
(U) Inhalation Toxicology of Fog Oil Obscurant							
12. SUBJECT AREAS							
06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
81 08		85 12		DA		D Other Gov't	
17. CONTRACT GRANT				18. RESOURCES - ESTIMATE			
a. DATE EFFECTIVE		b. EXPIRATION		FISCAL YEARS		c. PROFESSIONAL WORKYEARS	
85 01		86 02					
b. CONTRACT GRANT NUMBER				d. FUNDS (In thousands)			
81PFI810							
c. TYPE		d. AMOUNT		84		4.9	
pp		-0-		85		2.5	
e. KIND OF AWARD		f. CUM TOTAL				282	
CON		1512493				00	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME				a. NAME			
US Army Medical Bioengineering Research & Development Laboratory				Inhalation Toxicology Branch, MD-82 Health Effects Research Laboratory			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010				USEPA Research Triangle Park, NC 27711			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
FINCH, R A				CROSE, E			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-7104				919-541-2531			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				GRAHAM, J			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				DAVIES, D			
22. KEYWORDS (Precede EACH with Security Classification Code)							
(U) Fog Oil; (U) Smoke; (U) Obscurant; (U) Mammalian Toxicology; (U) RAM III; (U) PO; (U) Lab Animals; (U) Rats							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) Comprehensive definition of the toxicologic effects of the Army fog oil smoke system.							
24. (U) Sprague-Dawley rats will be exposed to aerosols of fog oil smoke in whole body, dynamic flow exposure chambers. The four phases of the study include determination of the LC50 at two time periods, range-finding studies for repeated exposures, biologic effects of various intermittent repeated exposure regimens, and 13 week exposures with 4 to 8 week recovery.							
25. (U) 8507 - 8509. The range-finding studies showed that the petroleum aerosol produced a marked reduction in body weight which was due to anorexia. Since the reduced food consumption may have been due to preening, nose only exposures were also conducted. Since reduced body weight was also observed with this method of exposure, the toxicity was probably due to lung deposition of the aerosol. A 90-day subchronic inhalation study with male rats has been completed and data reduction is in progress. An additional 90-day subchronic inhalation study with both male and female rats has been completed and data reduction is in progress. Additional 90-day subchronic studies, in which a NOAEL was to be determined and sex differences were assessed, have been completed and data reduction is in progress.							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG 7494	2. DATE OF SUMMARY 85 09 06	REPORT CONTROL SYMBOL DD-DR&E(A) 636	
3. DATE PREV SUM'RY 84 10 04	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	287			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Neurobehavioral Effects of Carbon Monoxide (CO) Exposure in Humans							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 21 Weapons Effects							
13. START DATE 81 08	14. ESTIMATED COMPLETION DATE 87 08		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 09		EXPIRATION 87 08		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER 81PP1812						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT 200000		85		2.5	
e. KIND OF AWARD EXT		f. CUM/TOTAL 874000		86		3.5	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Environmental Protection Agency Health Effects Research Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Neurotoxicology Division Research Triangle Park, NC 27711			
c. NAME OF RESPONSIBLE INDIVIDUAL KELLY, J A				c. NAME OF PRINCIPAL INVESTIGATOR BENIGNUS, V A			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 919-541-2601			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Study; (U) Carbon Monoxide; (U) Weapons Health & Performance Effects; (U) Neurobehavioral Effects; (U) Volunteers; (U) RAM III; (U) EO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) The overall objective of this study program is to evaluate the neurobehavioral and performance effects of CO in humans in order to identify and assess, quantitatively, military crew performance effects upon exposure during operation of ground and aircraft weapons.							
24. (U) Through a sequence of human clinical study protocols culminating in a field research study, the neurobehavioral effects of CO exposure in young healthy volunteer test subjects will be evaluated. Performance parameters under protocol evaluation will include perceptual, vigilance, psychomotor, intellectual and selected physiological variables in exposed and control subgroups of volunteers exposed to CO. Performance tasks and CO exposure conditions will be designed to simulate Army weapons system crew space conditions, and volunteers will be young healthy males to represent the military field soldier weapon system operator work force.							
25. (U) 8410 - 8509. Progress for this period included: (1) Pilot studies for high level transient (CO) protocol have begun. To date four subjects have been tested; (2) Technical Report on Putz Replication has been published; (3) Study on Speech Perception in Noise (SPIN) has been completed and a draft is being prepared for publication in a peer-review journal and (4) Planning meetings for upcoming field studies have been held.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA307943	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 08 26	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	AB	288			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Testing of Individual Blast Overpressure Dosimeter							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment; 0621 Weapons effects							
13. START DATE 85 05	14. ESTIMATED COMPLETION DATE 85 08	15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D. Other Gov't				
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE	85 05	EXPIRATION	85 08	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER	85PP5857						
c. TYPE	PP	d. AMOUNT	0	84	0.0	0	
e. KIND OF AWARD	CON	f. CUM/TOTAL	\$13,000	85	0.2	13	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Department of Energy Albuquerque Operations Office				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box 5400 Albuquerque, NM 87115				
c. NAME OF RESPONSIBLE INDIVIDUAL Arnold, M F			c. NAME OF PRINCIPAL INVESTIGATOR Richmond, D				
d. TELEPHONE NUMBER (include area code) 301-663-2144			d. TELEPHONE NUMBER (include area code) 505-844-6095				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION M			f. NAME OF ASSOCIATE INVESTIGATOR (if available) g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Blast; (U) Overpressure; (U) Dosimeter; (U) Blast Injury; (U) Concussion; (U) PO; (U) RAM II; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To test blast overpressure dosimeter developed under Small Business Innovative Research (SBIR) contract No. DAMD-17-85-C-5068.							
24. (U) Dosimeters will be placed on test range during blast test. The results recorded on the dosimeters will be compared to electronically measured pressures.							
25. (U) (8505-8509) Dosimeters were tested on a blast test range. Test results were used to calibrate the dosimeters in a dynamic environment.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA305429	85 09 01	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
84 10 01	D CHANGE	U	U		CX	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER	
a. PRIMARY		62777A	3E162777A878	CA	289	
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01			
11. TITLE (Precede with Security Classification Code) (U) Evaluation of DEGDN (Diethyleneglycoldinitrate) and Two DEGDN Containing Compounds						
12. SUBJECT AREAS						
06 20 Toxicology; 06 10 Industrial (occupational) Medicine						
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD
84 06		87 02		DA		D Other Gov't
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)
85 08		87 02				
b. CONTRACT/GRANT NUMBER						
84PP4856						
c. TYPE		d. AMOUNT				
		-0-				
e. KIND OF AWARD CON		f. CUM/TOTAL				
		80128				
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME				a. NAME		
US Army Medical Bioengineering Research & Development Laboratory				Laboratory for Energy-Related Health Research		
b. ADDRESS (include zip code)				b. ADDRESS		
Fort Detrick Frederick, MD 21701-5010				School of Veterinary Medicine University of California Davis, CA 95616		
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR		
PARMER, D L				GOLDMAN, M		
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)		
301-663-7207				916-752-1340		
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
Foreign Intelligence Not Applicable						
MILITARY/CIVILIAN APPLICATION H				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Hazards; (U) Mutagenicity; (U) Carcinogenicity; (U) Diethyleneglycoldinitrate; (U) Nitrate ester Propellants; (U) PO; (U) RAM III						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) To determine possible mutagenicity and carcinogenicity of Diethyleneglycoldinitrate (DEGDN) and two propellant formulations containing DEGDN.						
24. (U) DEGDN and two propellant formulations - JA2 and DIGL-RP will each be subjected to two assays. The mouse lymphoma mutation assay will show that the suspect compounds are also capable of mutating mammalian cells. A final cell transformation will provide an in vitro test capable of identifying a candidate compounds carcinogenicity.						
25. (U) 8410 - 8509. Sample shipment received January-February 1985. Difficulties with creating test solutions resolved June 1985. The mouse lymphoma assay was initiated August 1985.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1 AGENCY ACCESSION DA300881	2 DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 05	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	290			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Data Base Assessment of Environmental and Toxicological Factors in Water to Update and Modernize Content of TB Med 577							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology; 06 09 Hygiene and Sanitation							
13. START DATE 82 10	14. ESTIMATED COMPLETION DATE 85 11		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 04		EXPIRATION 85 11		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER 82PP2817						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT -0-		84		10.5	
e. KIND OF AWARD CON		f. CUM. TOTAL 2117000		85		7.8	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Lawrence Livermore National Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS University of California P.O. Box 5507 Livermore, CA 94550			
c. NAME OF RESPONSIBLE INDIVIDUAL SCHAUB, S A				c. NAME OF PRINCIPAL INVESTIGATOR ANSPAUGH, L R			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 415-422-8361			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) DANIELS, J I			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available) LAYTON, D W			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Potable Water; (U) Toxicology; (U) Risk Assessment; (U) Field Analysis; (U) Pollution; (U) Treatment; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The proposed Data Base Assessment Study is a multifaceted evaluation of the current technical data base for waterborne constituents of health concern related to the preventive medicine mission in field water supply. Emphasis is placed on: identification of significant chemical, biological and radiological pollutants and warfare agents in water; establishment of health criteria and standards for various use conditions and exposure risk assessments; and scenario specific contaminant problems.</p> <p>24. (U) Study will utilize broad based literature search and personal contact with various Army communities to derive input to assessment study. The major waterborne constituents of concern will be identified based upon their occurrence, treatability, impact on field troop health and risk to accomplishment of Army missions. Appropriate methodologies for preparing health criteria will be selected and used to develop such criteria and subsequent standards based upon exposure duration, concentrations, and acceptable troop performance to maintain combat effectiveness. Risk analysis will be performed to develop command decision tables, nomograms, matrices for use where combat decisions may hinge on use and subsequent effects of subpotable water.</p> <p>25. (U) 8503 - 8509. Screening studies to identify important organic, inorganic, and sabotage poisons, and also pathogens in field water supplies have been completed. New water quality standards have been recommended for the following constituents: chloride, sulfate, nitrate, magnesium, arsenic, cyanide, total dissolved solids, turbidity, color and radionucleotides. Evaluation of ROWPU treatment technologies to remove water contaminants has been conducted. New data base acquisition and evaluation is being performed for chemical agents in water.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305606	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&B(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	291			
b. CONTRIBUTING							
c. <del>COOPERATING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code)(U) Health Effects Research on Dimethylsulfoxide (DMSO) Munition Recrystallization Process Solvent. Phase II.							
12. SUBJECT AREAS 06 20 Toxicology; 06 10 Industrial (occupational) Medicine							
13. START DATE 84 05	14. ESTIMATED COMPLETION DATE 86 05	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 05	EXPIRATION 86 05	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 84PP4840		84		1.8	131		
c. TYPE PP	d. AMOUNT -0-	85		0.0	00		
e. KIND OF AWARD CON		f. CUM/TOTAL 131000					
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Laboratory for Energy-Related Health Research School of Veterinary Medicine			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS University of California Davis, CA 95616			
c. NAME OF RESPONSIBLE INDIVIDUAL DACRE, J C				c. NAME OF PRINCIPAL INVESTIGATOR GOLDMAN, M			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 916-752-1340			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)(U) Chemical Hazards; (U) Mutagenicity; (U) Health Protection; (U) Army Munitions; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To identify the mutagenic components of two munitions-related samples, identified as recycle solvent and evaporator sludge. These samples represent DMSO solutions of the munitions HMX, RDX, as well as several known and unknown degradation products.</p> <p>24. (U) Chemical separation by high performance liquid chromatography will be combined with the Ames mutagenicity assay to isolate and purify the most mutagenic components of the mixture for subsequent identification by GC/MS. Known compounds will be compared with the components responsible for mutagenic effect. A mouse lymphoma mutation assay will further show that the suspect compounds are also capable of mutating mammalian cells. A final cell transformation assay will provide an in vitro test capable of identifying a candidate compounds carcinogenicity.</p> <p>25. (U) 8410 - 8509. Benzothiazole was tested and shown to be non-mutagenic using the Ames Assay. The evaporator sludge has been fractionated and the fractions submitted to Ames Assay. The results were negative, probably due to sample dilution. Using the sister chromatid exchange, the sludge samples were found to have mutagenic activity.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION A308395	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 06	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62777A	3E162777A878	CA	292		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Prototype Testing of a Semi-Continuous Activated Sludge Treatment System							
12. SUBJECT AREAS 06 09 Hygiene and Sanitation; 07 03 Organic Chemistry							
13. START DATE 85 04		14. ESTIMATED COMPLETION DATE 86 07		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 06		EXPIRATION 86 07		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER		DAMD17-85-C-5081				b. FUNDS (In thousands)	
c. TYPE J		d. AMOUNT -0-		84		0.0	
e. KIND OF AWARD CON		f. CUM/TOTAL 104314		85		0.5	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Carpenter Environmental Associates, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 406 Paulding Avenue Northvale, NJ 07647			
c. NAME OF RESPONSIBLE INDIVIDUAL BURROWS, W D				c. NAME OF PRINCIPAL INVESTIGATOR BELL, B A			
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 201-767-1932			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) RDX; (U) HMX; (U) TNT; (U) Wastewater; (U) Biodegradation; (U) R&M III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objective is to evaluate, using authentic wastewater, a demonstration-scale wastewater treatment plant which has previously been shown at the bench to effectively treat synthetic munitions production wastewaters. This study relates to the public health and environmental health hazards associated with discharge of wastewaters at Army ammunition plants.</p> <p>24. (U) A 10,000 gpd semicontinuous activated sludge treatment system will be designed, procured, and installed at Holston Army Ammunition Plant. The system will be operated with Holston production wastewaters for five months, and all relevant operational and treatability parameters will be monitored. Thru Sep 1985 a total of \$99,814 of reimbursable funds have been applied to this contract.</p> <p>25. (U) 8506 - 8509. The treatment plant is under construction with delivery scheduled for September 1985.</p>							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA308753	2. DATE OF SUMMARY 85 06 21	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY A NEW	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER		TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62777A	3E162777A878		CA	293		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Inactivation of Hepatitis A Virus (HAV) by Chlorine and Iodine in Water							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 09 Hygiene and Sanitation							
13. START DATE 85 10		14. ESTIMATED COMPLETION DATE 88 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 10		EXPIRATION 88 03		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER DAMD17-86-C-6053						b. FUNDS (In thousands)	
c. TYPE S		d. AMOUNT 30000		84		0.0	
e. KIND OF AWARD NEW		f. CUM/TOTAL 30000		85		0.5	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME University of North Carolina School of Public Health			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Chapel Hill, NC 27514			
c. NAME OF RESPONSIBLE INDIVIDUAL SCHAUB, S A				c. NAME OF PRINCIPAL INVESTIGATOR SOBSEY, M D			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 919-966-3852			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Hepatitis A Virus; (U) Disinfection; (U) Enterovirus; (U) Water; (U) Chlorine; (U) Iodine; (U) Kinetics; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Principal objectives are to quantitatively determine the kinetics of disinfection of Hepatitis A virus (HAV) in waters with chlorine and iodine disinfectants used by the field Army. Also the study will compare the relative disinfection efficiency of HAV versus other enteroviruses and indicator microorganisms.</p> <p>24. (U) Free available chlorine (FAC), monochloramine, and iodine (Army issue tablets) will be used at typical field water disinfectant levels to quantitatively characterize kinetic disinfection profiles of the HAV, polio, ECHO, and MS-2 viruses and <u>E. coli</u> over a 5 log inactivation range. Water challenges will be buffered distilled water, well water, water containing 5 NTU bentonite, water containing 10 mg/L humic/fulvic acids, temperatures of 5°C and 25°C, pH's of 4.5, 7 and 9.5, and also worst case water containing the bentonite and humic/fulvic acids at pH 9.5 and 5°C.</p> <p>25. (U) None. New contract.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOH0036	2. DATE OF SUMMARY 85 09 23	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 07 23	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	294			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Army Synthetic and Alternative Fuels Health Hazard Characterization							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology; 06 01 Biochemistry							
13. START DATE 81 08	14. ESTIMATED COMPLETION DATE 86 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 10	EXPIRATION 86 09	FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 81PPI813							
c. TYPE PP	d. AMOUNT -0-	85		1.0	00		
e. KIND OF AWARD CON	f. CUM/TOTAL 420000	86		1.5	00		
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Oak Ridge National Laboratory Analytical Chemistry Division			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box X Oak Ridge, TN 37830			
c. NAME OF RESPONSIBLE INDIVIDUAL EATON, J C				c. NAME OF PRINCIPAL INVESTIGATOR GUERIN, M R			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 615-574-4862			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) FRY, R			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Shale Oil; (U) Diesel Fuel; (U) Chemical Characterization; (U) Toxicology; (U) Carcinogenicity; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Comprehensive chemical/physical characterization and definition of the toxicologic, effects potential of shale oil-derived versus petroleum-derived Army diesel fuel to support health protection criteria recommendations.</p> <p>24. (U) Physical, chemical, and biological testing will be conducted using several Army diesel fuels from shale oil, tar sands, and petroleum. Focus is on health hazards from direct dermal and vapor inhalation exposures. Experimental approach includes physical and chemical characterization of the fuel mixtures; selected class fractionation and selected components evaluation for conduct and interpretation of biological testing. Thru Sep 1985, a total of \$210,000 of reimbursable funding has been applied to this project order.</p> <p>25. (U) 8507 - 8509. Vapor generator technology has been developed and was tested with three detectors for continuous monitoring of vapor concentrations in the chamber. The preliminary compositional analysis of head space vapors from Phillip's diesel fuel (No. 1910) and shale derived fuel (No. 4801) by GLC showed similar profiles with the exceptions of predominantly higher hydrocarbons in the generated vapors. Quantitative analyses of inhalable volatile compounds from head space at 25°C are being studied in two shale derived fuels and four petroleum diesel fuels. One petroleum diesel fuel, Phillips reference DF2 was studied at four different temperatures, (25°C, 35°C, 50°C and 65°C) to simulate various working conditions. Concentration variations were found with temperature change. Gravimetric analyses of two shale derived and four petroleum derived fuels are in progress.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA308749	85 10 01	DD-DR&RIAR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A WORK UNIT
84 12 28	D CHANGE	U	U		CX	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	62777A	3E162777A878	CA	295		
b. CONTRIBUTING						
c. CONFIRMATION	DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code)(U) Development of a Confirmatory Chemical Test for Exposure to 3-Quinuclidinyl Benzilate (BZ)						
12. SUBJECT AREAS 07 03 Organic Chemistry; 06 10 Industrial (Occupational) Medicine; 15 02 Chemical, Biological and Radiological Warfare						
13. START DATE	14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION	16. PERFORMANCE METHOD		
85 02	86 03		DA	D Other Gov't		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	85 02	EXPIRATION	86 03	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER	85PP5836					
c. TYPE	PP	d. AMOUNT	-0-	85	1.2	120
e. KIND OF AWARD	CON	f. CUM/TOTAL	120000	86	0.0	00
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Center for Analytical Chemistry National Bureau of Standards			
b. ADDRESS (include zip code)			b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010			Gaithersburg, MD 20899			
c. NAME OF RESPONSIBLE INDIVIDUAL			c. NAME OF PRINCIPAL INVESTIGATOR			
BAUSUM, H T			WHITE, E			
d. TELEPHONE NUMBER (include area code)			d. TELEPHONE NUMBER (include area code)			
301-663-7207			301-921-2153			
21. GENERAL USE			f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable			BYRD, G D			
MILITARY/CIVILIAN APPLICATION H			g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				SNIEGOSKI, L T		
22. KEYWORDS (Precede EACH with Security Classification Code)						
(U) BZ; (U) Analytical Test Development; (U) RAM III; (U) PO						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
<p>23. (U) To develop and validate a confirmatory chemical test for BZ exposure, by detection of BZ or a metabolite in a biological fluid. The test will form part of the occupational health program for planned BZ demil operations by the US Army.</p> <p>24. (U) The work will be performed in four phases. Phase I will be an information gathering phase and will identify the most promising analytical approaches and the required sensitivity. Phase II will encompass test development and precision and accuracy determination. In Phase III, test validation will be performed, to include the effect of interfering substances and a statistical study of the variability of results. In Phase IV the methodology will be transferred to a user laboratory designated by the Army.</p> <p>25. (U) 8412 - 8509. The literature study and consultation with knowledgeable persons (Phase I) was completed and a Phase Report received and reviewed. Development of the analytical method is underway with GCMS isotope dilution the method of choice. Adequate sensitivity of detection of the trimethylsilyl derivatives of BZ, benzoic acid and 3-quinuclidinol in water has been achieved. Labelled metabolites, <sup>18</sup>O-3Q and deuterated BA, have been synthesized.</p>						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA300021	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 02 14	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		62777A	3E162777A878	CA	296		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	86-01				
11. TITLE (Precede with Security Classification Code) (U) New Disinfection Agents for Water							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE 82 09		14. ESTIMATED COMPLETION DATE 87 04		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 10		EXPIRATION 87 04		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER DAMD17-82-C-2257						b. FUNDS (In thousands)	
c. TYPE T		d. AMOUNT 100000		85		2.2	
e. KIND OF AWARD SUP		f. CUM/TOTAL 482812		86		3.0	
						61	
						100	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Auburn University Water Resources Research Institute			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 202 Hargis Hall 02140 Auburn University, AL 36849			
c. NAME OF RESPONSIBLE INDIVIDUAL EATON, J C				c. NAME OF PRINCIPAL INVESTIGATOR WORLEY, S D			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 205-826-4043			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Disinfection; (U) Potable Water; (U) Microbiology; (U) Chlorination; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Evaluate the feasibility of using specific N-chloramines as disinfection agents for military field water supplies. Criteria for evaluating the new compounds include: effectiveness in killing pathogenic microorganisms, stability in storage and in water solution, low corrosivity and effectiveness in high chlorine-demand water.</p> <p>24. (U) Compound I (3-chloro-4,4-dimethyl-2-oxazolidinone) shall be evaluated in combination with hypochlorite to provide both fast and long-term disinfection. New N-halomine compounds shall be synthesized and screened for stability and effectiveness as disinfectants. Promising candidates will be more extensively tested against a number of microorganisms. Thru Sep 1985, a total of \$105,000 of reimbursable funds have been applied to this contract.</p> <p>25. (U) 8412 - 8509. Annual Report has been submitted. Two open literature articles have been published and another is in press. A technology transfer meeting was held at Fort Detrick in April 1985. A 10:1 mixture of Compound I: Calcium hypochlorite (HTH) was shown to combine the residual effectiveness of Compound I and the quick action of HTH at pH 7.0 and 9.5 in clean water.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA304816	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 13	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	298			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Evaluation of Field Water Data Base Assessment Study Deliverables							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE 84 06	14. ESTIMATED COMPLETION DATE 86 03		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 08	EXPIRATION 86 03		FISCAL YEARS	j. PROFESSIONAL WORKYEARS		b. FUNDS (in thousands)	
b. CONTRACT/GRANT NUMBER 84PP4851							
c. TYPE	d. AMOUNT -0-		84	0.6		45	
e. KIND OF AWARD CON	f. CUM/TOTAL 60000		85	0.2		15	
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Oak Ridge National Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box X Oak Ridge, TN 37831				
c. NAME OF RESPONSIBLE INDIVIDUAL SCHAUB, S A			c. NAME OF PRINCIPAL INVESTIGATOR ROSS, R H				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 615-574-7797				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Potable Water; (U) Toxicology; (U) Risk Assessment; (U) Field Analysis; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Effort will emphasize scientific evaluation of the scientific/engineering approaches and end items being developed by the Lawrence Livermore National Laboratory (LLNL) for a field water supply data base assessment study. The major thrust will be the evaluation of water quality standards recommendations and risk assessment indices being proposed by LLNL.</p> <p>24. (U) A team of Oak Ridge National Laboratory (ORNL) personnel including chemists, epidemiologists, and toxicologists will review the study approaches and the end products being prepared by LLNL for inclusion in the new Army TB Med 577 (Sanitary Control and Surveillance of Field Water Supplies). The ORNL will prepare specific critical review packages for each task and item from the LLNL study for consideration by a DOD steering committee.</p> <p>25. (U) 8506 - 8509. Draft criteria documents (Recommended Field Water Standards) for turbidity, color, TDS, radionuclotides, chloride, magnesium, sulfate arsenic and cyanide have been technically evaluated. Recommended changes and clarification of various criteria elements have been prepared and submitted to the project officer for LLNL modifications to the documents.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA 309041	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY A NEW	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT 62777A	PROJECT NUMBER 3E162777A878	TASK AREA NUMBER CA	WORK UNIT NUMBER 299			
a. PRIMARY							
b. CONTRIBUTING							
c. CONTRIBUTING	XXXXXXXXXX DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) ASTM Round Robin Testing - Virus in Soils							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 09 Hygiene and Sanitation							
13. START DATE 85 09		14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 09 EXPIRATION 86 09				FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER 85-PP-5875						b. FUNDS (In thousands)	
c. TYPE		d. AMOUNT 20000		85		0.2	
e. KIND OF AWARD NEW		f. CUM/TOTAL 20000		86		0.2	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Environmental Protection Agency			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Environmental Monitoring & Support Laboratory Cincinnati, OH 45268			
c. NAME OF RESPONSIBLE INDIVIDUAL SCHAUB, S A				c. NAME OF PRINCIPAL INVESTIGATOR SAFFERMAN, R S			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 513-569-7334			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Enteric Virus; (U) Soil; (U) Land Wastewater Application: (U) Recovery; (U) Concentration; (U) Quantification; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Study will be round robin test of several common methods to quantitatively recover enteric viruses from soils deliberately or accidentally contaminated with sewage or sewage sludge. A single best virus recovery method will be determined for ASTM consensus standards balloting.</p> <p>24. (U) Eight major environmental microbiology laboratories (Government and University) will test two virus recovery methods on four common soils that will be seeded with polio and ECHO viruses contained in primary treated sewage. All labs will test aliquots of the same virus/soil samples from common sources using identical protocols. All results will be evaluated statistically and the test labs will use consensus balloting to recommend the virus in soil recovery method for ASTM water standards.</p> <p>25. (U) None.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG5136	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 12 31	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BF	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	62777A	3E162777A878	CA	300			
b. CONTRIBUTING	62720A	3E162720A835	AA	004			
c. <del>COMPARISON</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Chemical Characterization and Toxicologic Evaluation of Airborne Mixtures							
12. SUBJECT AREAS 06 10 Industrial (occupational) medicine; 06 20 Toxicology							
13. START DATE 82 07	14. ESTIMATED COMPLETION DATE 86 09		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 09 EXPIRATION 86 09			FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER 82PP2802			84	2.2	100		
c. TYPE PP d. AMOUNT 40000			85	0.5	108		
e. KIND OF AWARD EXT f. CUM/TOTAL 548000							
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Department of Energy (DOE) Oak Ridge National Laboratory				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS P.O. Box X Oak Ridge, TN 37831				
c. NAME OF RESPONSIBLE INDIVIDUAL EATON, J C			c. NAME OF PRINCIPAL INVESTIGATOR GUERIN, M R				
d. TELEPHONE NUMBER (include area code) 301-663-7207			d. TELEPHONE NUMBER (include area code) 615-574-4860				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION H			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Diesel Fuel; (U) Smoke/Obscurants; (U) Red Phosphorus; (U) Mammalian Toxicology; (U) Chemistry; (U) Aerosol; (U) RAM III; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Various developmental and fielded smoke systems are to be chemically and physically characterized as part of an evaluation of the potential health effects on exposed troops during testing and training and on the battlefield. Other industrial materials are to be characterized for evaluation as industrial workplace hazards. Toxicologic evaluation of smoke/obscurant aerosols will include short-term tests and mammalian inhalation exposures.</p> <p>24. (U) The process of evaluation of aerosolized materials begins with the development of laboratory-scale generators that model the fielded smoke system. Various instrumental techniques are used to chemically characterize the starting materials and the deployed smoke. Inhalation toxicity testing is conducted in three phases: acute single exposures for range finding; multiple exposures to define the major physiological effects; and subchronic exposures to define the no observed adverse effects level and to study recovery after a series of exposures.</p> <p>25. (U) 8412 - 8508. The following final task and phase reports have been received: Chemical Characterization of Combusted Inventory Red and Violet Smoke Mixes - - AD A131527; Chemical Characterization of Army Colored Smokes: Inventory Smoke Mixes (Red, Violet, Yellow, and Green) - - AD A134777; Inhalation Toxicology of Diesel Fuel Obscurant Aerosol in Sprague-Dawley Rats, Phase 3, Subchronic Exposures - - AD A150100; Diesel Fuel Smoke Particulate Dosimetry in Sprague-Dawley Rats - - AD A142914; Chemical and Physical Characterization of Phosphorus Smokes for Inhalation Exposure and Toxicology Studies - - AD A153824; and Carcinogenesis of Nitrated Toluenes and Benzenes, Skin and Lung Tumor Assays in Mice - - AD A155723.</p>							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DA307122	85 09 06	DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A WORK UNIT	
85 01 17	D CHANGE	U	U		CX		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	62777A	3E162777A878	CA		30T		
b. CONTRIBUTING	61102A	3M161102BS10	CC		342		
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Problem Definition Study for Evaluating the Chemical and Toxicological Properties of the Combustion Products of Rifle and Gun Systems							
12. SUBJECT AREAS							
06 21 Weapons Effects; 06 20 Toxicology; 07 00 Chemistry; 19 06 Guns							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
85 02		86 09		DA		D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		PROFESSIONAL WORK YEARS	
85 10		86 09					
b. CONTRACT/GRANT NUMBER 85PP5840							
c. TYPE PP		d. AMOUNT 115024		85		2.5	
e. KIND OF AWARD SUP		f. CUM/TOTAL 238000		86		1.9	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Department of Energy Oak Ridge National Laboratory			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Information Division P.O. Box X Oak Ridge, TN 37831			
c. NAME OF RESPONSIBLE INDIVIDUAL PARMER, D L				c. NAME OF PRINCIPAL INVESTIGATOR ROSS, R H			
d. TELEPHONE NUMBER (include area code) 301-663-7207				d. TELEPHONE NUMBER (include area code) 615-574-7797			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION: H				f. NAME OF ASSOCIATE INVESTIGATOR (if available) GUERIN, M g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Weapons Combustion Products; (U) Combustion Toxicology; (U) Combustion Chemistry; (U) PO; (U) Guns; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Through a detailed and comprehensive review of the literature to evaluate the following subjects:</p> <ul style="list-style-type: none"> <li>a. Characterize the literature on chemical analysis of weapons combustion products.</li> <li>b. Characterize the literature on chemical analysis, sampling, and toxicological evaluations of other combustion products in order to define strategies for weapons combustion products.</li> </ul> <p>Perform a feasibility study on the construction of a facility for toxicological evaluations of weapons combustion products.</p> <p>24. (U) A comprehensive, although systematic, search of the open literature will be performed on all topics to be discussed. Of particular interest will be the holdings of DTIC, the Encyclopedia of Explosives and past and current investigations of the analytical chemistry division. The Generator Feasibility Study will depend initially on the previous literature development. Other background information on design of gun systems will be reviewed as necessary. A conceptual design of the facility will be the next step.</p> <p>25. (U) 8502 - 8509. A literature review on the chemical analysis of weapons combustion products has been completed and a draft report is being prepared. Literature review to support other phases of the research have been initiated.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY						1. AGENCY ACCESSION DA300486	2. DATE OF SUMMARY 85 05 21	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 29	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT			
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER		TASK AREA NUMBER	WORK UNIT NUMBER				
a. PRIMARY	63751A	3M463751D993		BA	001				
b. CONTRIBUTING									
c. CANCELLING	DA LRRDAP, FY 85-01								
11. TITLE (Precede with Security Classification Code) (U) Noninvasive Heart Rate Monitor									
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment									
13. START DATE 82 11		14. ESTIMATED COMPLETION DATE 84 10		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract			
17. CONTRACT/GRANT									
a. DATE EFFECTIVE 84 10		EXPIRATION 84 10		18. RESOURCES ESTIMATE					
b. CONTRACT/GRANT NUMBER		DAMD17-83-C-3019		FISCAL YEARS		a. PROFESSIONAL WORK YEARS		b. FUNDS (In thousands)	
c. TYPE U		d. AMOUNT 0		84		1.3		154	
e. KIND OF AWARD CON		f. CUM/TOTAL \$291,038		85		0.0		0	
19. RESPONSIBLE DOD ORGANIZATION									
a. NAME US Army Medical Bioengineering Research & Development Laboratory					a. NAME Industrial and Biomedical Sensors Corp.				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010					b. ADDRESS 1345 Main Street Waltham, MA 02154				
c. NAME OF RESPONSIBLE INDIVIDUAL Thayer, C R					c. NAME OF PRINCIPAL INVESTIGATOR Chang, K-W				
d. TELEPHONE NUMBER (include area code) 301-663-2144					d. TELEPHONE NUMBER (include area code) 617-891-4201				
21. GENERAL USE									
Foreign Intelligence Considered					f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
MILITARY/CIVILIAN APPLICATION L					g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Heart; (U) Monitor; (U) Medical; (U) Field; (U) Noninvasive; (U) Volunteers; (U) RAM V									
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)									
23. (U) To develop a noninvasive heart rate monitor for use at field combat locations and during transportation.									
24. (U) Determine validity of the design concept and approach of a noninvasive heart rate monitor and develop/fabricate one noninvasive heart rate monitoring device.									
25. (U) (8409-8410) Engineering tests indicate that this approach will not satisfactorily meet the Army's requirements. All deliverables required by the contract have been received. The contract has been completed.									

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY						1. AGENCY ACCESSION DA300494	2. DATE OF SUMMARY 85 03 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636
3. DATE PREV SUM'RY 84 10 29	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER				
a. PRIMARY	63751A	3M463751D993	CA	002				
b. CONTRIBUTING								
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01						
11. TITLE (Precede with Security Classification Code) (U) Noninvasive Heart Rate Monitor								
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment								
13. START DATE 82 12	14. ESTIMATED COMPLETION DATE 84 10		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD B. Contract				
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE					
a. DATE EFFECTIVE 84 10	EXPIRATION 84 10		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)			
b. CONTRACT/GRANT NUMBER DAMD17-83-C-3018								
c. TYPE U	d. AMOUNT 0		84	0.2	50			
e. KIND OF AWARD CON	f. CUM/TOTAL \$150.705		85	0.0	0			
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION					
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME RCA Laboratories					
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS David Sarnoff Research Center Princeton, NJ 08540					
c. NAME OF RESPONSIBLE INDIVIDUAL Thayer, C R			c. NAME OF PRINCIPAL INVESTIGATOR Nowogrodzki, M					
d. TELEPHONE NUMBER (include area code) 301-663-2144			d. TELEPHONE NUMBER (include area code) 609-734-2521					
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)					
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)					
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Heart; (U) Monitor; (U) Medical; (U) Field; (U) Noninvasive; (U) Volunteers; (U) RAM V								
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)								
23. (U) To develop a noninvasive heart rate monitor for use at field combat locations and during transportation.								
24. (U) Determine validity of the design concept and approach of a noninvasive heart rate monitor and develop/fabricate one (1) noninvasive heart rate monitoring device.								
25. (U) (8408-8410) Engineering tests indicate that this approach will not satisfactorily meet the Army's requirements. All deliverables required by the contract have been received. The contract has been completed.								

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA301115	2. DATE OF SUMMARY 84 12 04	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 11 05	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	63751A	3M463751D993	BA	003			
b. CONTRIBUTING							
c. <del>CHUNKING</del>	CARDS 1422A						
11. TITLE (Precede with Security Classification Code) (U) Noninvasive Chemical Casualty Vital Signs/Heart Rate Monitors							
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment							
13. START DATE 83 03	14. ESTIMATED COMPLETION DATE 84 09		15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD B. Contract			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 83 03	EXPIRATION 84 09		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER DAMD17-83-C-3072							
c. TYPE U	d. AMOUNT 0		84	0.0	0		
e. KIND OF AWARD CON	f. CUM. TOTAL \$353,531		85	0.0	0		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME Decision Science, Inc. Division of TITAN Systems, Inc.				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS 4901 Morena Boulevard San Diego, CA 92117				
c. NAME OF RESPONSIBLE INDIVIDUAL Thayer, C R			c. NAME OF PRINCIPAL INVESTIGATOR Halvorsen, K G				
d. TELEPHONE NUMBER (include area code) 301-663-2144			d. TELEPHONE NUMBER (include area code) 714-273-2922				
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available) g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Vital Signs; (U) Heart Rate; (U) Monitor; (U) Field Monitor; (U) Medical; (U) Noninvasive; (U) Volunteers; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a noninvasive vital signs monitor and a heart rate monitor for use by field medical personnel at forward medical treatment facilities and during evacuation of patients.							
24. (U) Develop a unique concept approach for obtaining vital signs data and design/fabricate prototypes for evaluation.							
25. (U) (8409-8412) Phase I of the contract has been completed. All reports and deliverables under phase I have been received. Preliminary engineering tests have indicated that the prototypes delivered under phase I will not be satisfactory. Phase II of the contract will not be continued.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA301113	85 10 01	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
85 07 08	K. COMPLETION	U	U		CX	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	63751A	3M463751D993	EB	004		
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01					
11. TITLE (Precede with Security Classification Code)						
(U) Noninvasive Chemical Casualty Vital Signs Monitor						
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment						
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD
83 02		85 06		DA		B. Contract
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)
85 03		85 06				
b. CONTRACT/GRANT NUMBER DAMD17-83-C-3064						
c. TYPE U		d. AMOUNT 0		84	1.3	294
e. KIND OF AWARD CON		f. CUM/TOTAL \$869,450		85	2.1	148
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME GMS Engineering Corp.		
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 8970-E Route 108, P.O. Box 2277 Columbia, MD 21045		
c. NAME OF RESPONSIBLE INDIVIDUAL Thayer, C R				c. NAME OF PRINCIPAL INVESTIGATOR Samaras, G M		
d. TELEPHONE NUMBER (include area code) 301-663-2144				d. TELEPHONE NUMBER (include area code) 301-596-4110		
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Heart; (U) Monitor; (U) Medical; (U) Field; (U) Noninvasive; (U) RAM V						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) To develop a noninvasive vital signs monitor for use by field medical personnel at the Battalion Aid Station and rear echelon areas.						
24. (U) Determine validity of the design concept and approach of a noninvasive vital signs monitor and develop/fabricate six (6) preproduction prototypes and spare parts.						
25. (U) (8504-8509) All deliverables required by the contract have been received. The contract has been completed.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DAOG7067	2. DATE OF SUMMARY 85 08 20	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 01 29	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	63751A	3M463751D993	BA	005			
b. CONTRIBUTING							
c. COORDINATING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Chemical Warfare Agent Protective Patient Wrap							
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment							
13. START DATE 81 06	14. ESTIMATED COMPLETION DATE 85 12		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D. Other Gov't		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 08		EXPIRATION 85 12	FISCAL YEARS		a. PROFESSIONAL WORKYEARS		b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER 81II1012							
c. TYPE IAO	d. AMOUNT \$ 10,000		84		0.0		0
e. KIND OF AWARD SUP	f. CUM/TOTAL \$275,000		85		0.1		10
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME US Army Natick Research and Development Center				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Natick, MA 01760				
c. NAME OF RESPONSIBLE INDIVIDUAL Reams, W H			c. NAME OF PRINCIPAL INVESTIGATOR Snow, P				
d. TELEPHONE NUMBER (include area code) 301-663-2144			d. TELEPHONE NUMBER (include area code) 617-651-5434				
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Defense; (U) Patient Treatment; (U) Chemical Agent Protection; (U) Bioengineering; (U) Volunteers; (U) IAO; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To develop a chemical warfare agent protective patient wrap capable of protecting decontaminated patients in a field environment from all known chemical agents without the need for the patient to have other protective gear. This item is required in the chemical warfare battlefield scenario.</p> <p>24. (U) Contractor will develop a minimum of six prototype wraps which will be comparatively evaluated against the current British wrap.</p> <p>25. (U) (8412-8508) Agent tests on samples of the six candidate fabrics are continuing at Dugway Proving Ground (DPG), UT, as well as tests on the seams and closures to determine the best one to use for the final design. Initial test data indicate that the slide fasteners will be suitable closures. This closure is the one used on the chemical biological (CB) overgarment. An entire wrap made from the selected fabric and closure will be tested in the large chamber at DPG using an instrumented mannequin. Respiratory protection testing was completed in June 1985 at the Chemical Research and Development Center (CRDC), Aberdeen Proving Ground, MD. Additional tests with treated carbon fabrics are planned for 1Q86 at CRDC. Physiological testing was completed June 1985 at the US Army Research Institute of Environmental Medicine (USARIEM), Natick, MA. Two of the six candidate fabrics tested at USARIEM are better than the other four, and ongoing agent testing at DPG is now focused on these two.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1 AGENCY ACCESSION DA303070	2 DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(IAR) 636	
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	63751A	3M463751D993	CA	006			
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Resuscitation Device, Individual, Manually Operated, Field							
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment							
13. START DATE 84 01	14. ESTIMATED COMPLETION DATE 85 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract		
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 85 04	EXPIRATION 85 06		FISCAL YEARS		a. PROFESSIONAL WORKYEARS		b. FUNDS (in thousands)
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4014							
c. TYPE U	d. AMOUNT 0		84		3.5		191
e. KIND OF AWARD CON	f. CUM/TOTAL \$199,154		85		1.5		8
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME MSA Research Corporation Div. of Mine Safety Appliances Co.				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Evans City, PA 16033				
c. NAME OF RESPONSIBLE INDIVIDUAL Malek, J W			c. NAME OF PRINCIPAL INVESTIGATOR Rankin, R L				
d. TELEPHONE NUMBER (include area code) 301-663-7277			d. TELEPHONE NUMBER (include area code) 412-538-3510				
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION M			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Ventilation; (U) Resuscitation; (U) Medical; (U) Field; (U) Manually Operated; (U) Individual; (U) Medical Equipment; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To design and develop a manually operated, compact, lightweight medical device, which can be operated by an individual soldier, to ventilate chemical warfare agent casualties in a field environment.							
24. (U) Current technology and equipment will be reviewed for applicability to the design concepts, and parameters will be specified to design a device meeting the requirements. Devices will be designed and fabricated for test and evaluation.							
25. (U) (8502-8509) MSA Research Corporation has successfully completed all contractual requirements. One hundred prototypes, design drawings, and final reports have been received and approved.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303157	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 12 13	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N BP	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	63751A	3M463751D993	CA		007		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Filter System - Resuscitation Device, Individual, Chemical (Burgin Adapter)							
12. SUBJECT AREAS 0602 Bioengineering; 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment							
13. START DATE 83 10	14. ESTIMATED COMPLETION DATE 84 09	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D. Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 83 10		EXPIRATION 84 09		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER 84II4002						b. FUNDS (In thousands)	
c. TYPE IAO		d. AMOUNT 0		84		1.0	
e. KIND OF AWARD CON		f. CUM/TOTAL \$92,000		85		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Armament, Munitions and Chemical Command			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Chemical Research and Development Center Aberdeen Proving Ground, MD 21010			
c. NAME OF RESPONSIBLE INDIVIDUAL Malek, J W				c. NAME OF PRINCIPAL INVESTIGATOR Boardway, J			
d. TELEPHONE NUMBER (include area code) 301-663-7277				d. TELEPHONE NUMBER (include area code) 301-671-2707			
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION M				f. NAME OF ASSOCIATE INVESTIGATOR (if available) Karwaoki, C			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Resuscitation; (U) Medical; (U) Field; (U) IAO; (U) Manually Operated; (U) Individual; (U) Chemical Warfare Filter; (U) Filter; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To design and develop a filter system for use with a Resuscitation Device, Individual, Chemical, to ventilate chemical warfare agent casualties in a field environment.							
24. (U) Design, fabricate, and evaluate a filter system based on requirements stated in a statement of work.							
25. (U) (8409-8509) Live agent testing has been accomplished. The final report has been submitted by the contractor. Contract is considered complete.							



<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA304538	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 07 23	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	63751A	3M463751D993	CA	008			
b. CONTRIBUTING	63732A	3S463732D836	BA				
c. CONTRIBUTING	64717A	3S464717D832	BA	DA LRRDAP, FY 86-01			
11. TITLE (Precede with Security Classification Code) (U) Military Transportable Field Radiographic and Fluoroscopic System							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment							
13. START DATE 84 06	14. ESTIMATED COMPLETION DATE 87 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 06	EXPIRATION 87 06		FISCAL YEARS		a. PROFESSIONAL WORK YEARS		b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4181				84		23	7519
c. TYPE U	d. AMOUNT 0		85		49	0	
e. KIND OF AWARD CON				f. CUM/TOTAL \$7,518,571			
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Picker International Government Systems Group			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 761 Beta Drive Mayfield, OH 44143			
c. NAME OF RESPONSIBLE INDIVIDUAL O'Connor, R J				c. NAME OF PRINCIPAL INVESTIGATOR Browne, D W			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 216-449-0200			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) X-Ray; (U) Field Medicine; (U) Field Equipment; (U) Radiology; (U) RAM II; (U) RAM V							
23. TECHNICAL OBJECTIVE 24 APPROACH 25 PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a Military Transportable Field Radiographic and Fluoroscopic System and deliver prototypes and the complete technical data package for the system.							
24. (U) Development contract.							
25. (U) (8409-8509) Design of engineering models has been completed, and engineering testing is under way. Delivery of the prototypes scheduled for 2nd Quarter FY 86 has been delayed until 4th Quarter FY 86. The responsible DoD organization will henceforth be the US Army Medical Materiel Development Activity.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA308247	2. DATE OF SUMMARY 85 06 28	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 05 30	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		63763A	3M263763D840	AE	026		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY 86-01					
11. TITLE (Precede with Security Classification Code) (U) To Develop and Demonstrate a Filmless Radiographic System for Field Use							
12. SUBJECT AREAS 0602 Bioengineering; 0612 Medical and hospital equipment							
13. START DATE 85 09		14. ESTIMATED COMPLETION DATE 88 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 10		EXPIRATION 88 03		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER		DAMD17-85-C-5271				b. FUNDS (In thousands)	
c. TYPE T		d. AMOUNT \$103,795		85		1.0	
e. KIND OF AWARD SUP		f. CUM/TOTAL \$203,795		86		1.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Philips Laboratories Division of North American Philips			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 345 Scarborough Road Briarcliff Manor, NY 10510			
c. NAME OF RESPONSIBLE INDIVIDUAL Salisbury, L L				c. NAME OF PRINCIPAL INVESTIGATOR Stupp, E H			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 914-945-6128			
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION H				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) X-Ray; (U) Filmless Radiography; (U) Filmless X-Ray; (U) Radiography; (U) RAM II							
23 TECHNICAL OBJECTIVE 24 APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a reusable filmless method for providing radiographic images for forward areas in the Army field environment.							
24. (U) Using electrophoretic panels made sensitive to radiation, produce an image by the migration of charged particles.							
25. (U) None.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA302231	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 01	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES: a. PRIMARY b. CONTRIBUTING c. <del>CONTRIBUTING</del>		PROGRAM ELEMENT 63764A	PROJECT NUMBER 3M463764D995	TASK AREA NUMBER AA	WORK UNIT NUMBER 031		
11. TITLE (Precede with Security Classification Code) (U) Teratology Studies on Agent GD							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE 83 06		14. ESTIMATED COMPLETION DATE 86 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT a. DATE EFFECTIVE 83 11 EXPIRATION 86 03 b. CONTRACT/GRANT NUMBER 83PP3812 c. TYPE PP d. AMOUNT -0- e. KIND OF AWARD CON f. CUM/TOTAL 193448				18. RESOURCES ESTIMATE FISCAL YEARS a. PROFESSIONAL WORKYEARS b. FUNDS (In thousands) 85 2.1 00 86 0.0 00			
19. RESPONSIBLE DOD ORGANIZATION a. NAME US Army Medical Bioengineering Research & Development Laboratory b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010 c. NAME OF RESPONSIBLE INDIVIDUAL DACRE, J C d. TELEPHONE NUMBER (include area code) 301-663-2014				20. PERFORMING ORGANIZATION a. NAME Food & Drug Administration National Ctr. for Toxicological Research b. ADDRESS Division of Teratogenesis Research Jefferson, AR 72079 c. NAME OF PRINCIPAL INVESTIGATOR LaBORDE, J B d. TELEPHONE NUMBER (include area code) 501-541-4307			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION M				f. NAME OF ASSOCIATE INVESTIGATOR (if available) g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Agents; (U) GD; (U) Teratology; (U) Health Effects; (U) Lab Animals; (U) RAM V; (U) Rats; (U) Rabbits; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To investigate the teratogenic potential of agent GD since many female Army personnel are susceptible to accidental exposure to GD, eg. researchers.							
24. (U) Studies will be conducted using standard federally-approved protocol in both rats and New Zealand white rabbits.							
25. (U) 8311-8509. Studies are in progress on the rabbit teratology of GD. Range-finding studies are in progress on the rat teratology of GD.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
				DA300105	85 09 30	DD-DR&RIAR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A WORK UNIT	
85 04 08	H TERM	U	U		DX		
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		63764A	3M463764D995	AA	032		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code)							
(U) Teratology Studies on Agent GB							
12. SUBJECT AREAS							
06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
82 09		85 06		DA		D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 10		EXPIRATION 85 06		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER		82PP2815				b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		3.0	
e. KIND OF AWARD CON		f. CUM/TOTAL 970613		85		2.0	
						145	
						76	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Food & Drug Administration National Center for Toxicological Research			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-501C				b. ADDRESS Division of Teratogenesis Research Jefferson, AR 72079			
c. NAME OF RESPONSIBLE INDIVIDUAL DACRE, J C				c. NAME OF PRINCIPAL INVESTIGATOR LaBorde, J B			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 501-541-4307			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Agents; (U) GB; (U) Teratology; (U) Health Effects; (U) RAM V; (U) Lab Animals; (U) Rats; (U) Rabbits; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To investigate the teratologic potential of Type I GB, Type II GB and 99% pure GB. The Army Surgeon General has directed that definitive teratology studies be performed because of possible exposures of females to the agent.							
24. (U) Studies will be conducted using standard federally-approved protocols in both rats and New Zealand white rabbits.							
25. (U) 8311 - 8509. Studies of Type I GB and Type II GB using rats and rabbits have been completed and a draft final report has been completed.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA302726	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 08 12	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER		TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	63764A	3M463764D995		AA	033		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Teratology Studies on Lewisite and Sulfur Mustard Agents							
12. SUBJECT AREAS 06 20 Toxicology; 06 10 Industrial (occupational) Medicine							
13. START DATE 83 05	14. ESTIMATED COMPLETION DATE 85 12			15. FUNDING ORGANIZATION DA	16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 04		EXPIRATION 85 12		FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 83PP3810							
c. TYPE PP	d. AMOUNT -0-			84	1.3	98	
e. KIND OF AWARD CON		f. CUM/TOTAL 698842		85	4.0	302	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Battelle Pacific Northwest Laboratories Department of Energy			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Battelle Boulevard Richland, WA 99352			
c. NAME OF RESPONSIBLE INDIVIDUAL FINCH, R A				c. NAME OF PRINCIPAL INVESTIGATOR HACKETT, P L			
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 509-376-5685			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Teratology; (U) Sulfur Mustard; (U) Lewisite; (U) Lab Animals; (U) Rabbits; (U) Rats; (U) PO; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) Many Army personnel, including females, are occupationally susceptible to accidental exposure to Lewisite and sulfur mustard, e.g. researchers. The objective is to evaluate the potential for teratogenicity of these compounds in laboratory animals.</p> <p>24. (U) The study will be conducted in both rats and New Zealand white rabbits in accordance with the guidelines set forth by the Interagency Regulatory Liaison Group.</p> <p>25. (U) 8504 - 8509. The laboratory facilities at Battelle Pacific Northwest Laboratories (DOE) have been upgraded and approved for neat agent use. Dose-range-finding studies for sulfur mustard in rats have been completed. The definitive sulfur mustard rat teratology study has been completed and the data is being analyzed. The dose-range-finding study for sulfur mustard in rabbits has been completed. The definitive sulfur mustard rabbit teratology study has been completed and the data is being analyzed. A draft report on the results of the sulfur mustard studies in rats and rabbits has been received and is being reviewed. The dose-range-finding study for lewisite in rats has been completed.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303237	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 08 05	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	63764A	3M463764D995	AA	034			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Filmless Radiology (Digital Imaging)							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment; 0602 Bioengineering							
13. START DATE 83 09	14. ESTIMATED COMPLETION DATE 85 12	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D. Other Gov't			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE	85 06	EXPIRATION	85 12	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (in thousands)	
b. CONTRACT/GRANT NUMBER	83MM3519						
c. TYPE	MIPR	d. AMOUNT	0	84	4.0	200	
e. KIND OF AWARD	CON	f. CUM/TOTAL	\$1,583,598	85	4.0	993	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Uniformed Services University of the Health Sciences School of Medicine			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 4301 Jones Bridge Road Bethesda, MD 20814			
c. NAME OF RESPONSIBLE INDIVIDUAL Salisbury, L L				c. NAME OF PRINCIPAL INVESTIGATOR Brahman, S L			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 202-295-3145			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Filmless Radiology; (U) Digital Imaging; (U) Digital X-Ray; (U) Filmless X-Ray; (U) Teleradiology; (U) Volunteers; (U) RAM II;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) RAM V; (U) MIPR							
<p>23. (U) The technical objective of this effort is to identify the critical digitization parameters for clinically diagnostic radiographs. This information will be used to develop Department of Defense performance specifications for digital radiographic equipment.</p> <p>24. (U) The approach will be to establish communication links between remote clinical sites and a central receiving facility and to establish referral and reporting patterns. A panel of experts will compare conventional film techniques with various digitizing methods.</p> <p>25. (U) (8505-8509) Data collection and interpretation are finished. Preliminary results were presented at a conference held in August 1985. The final written report is being prepared. A new proposal has been submitted by the Uniformed Services University of the Health Sciences School of Medicine to develop a unit test bed/training system and to subject it to a 4-year trial.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA300087	2. DATE OF SUMMARY 85 08 07	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 02 07	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	63764A	3M463764D995	AA		035		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Toxicity Studies on Agent VX							
12. SUBJECT AREAS 06 10 Industrial (Occupational) Medicine; 06 20 Toxicology							
13. START DATE 82 09	14. ESTIMATED COMPLETION DATE 86 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 08	EXPIRATION 86 03		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 82PP2816							
c. TYPE PP	d. AMOUNT 214194		85		4.0		134
e. KIND OF AWARD EXT				86		6.0	
f. CUM/TOTAL 1378170						214	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Department of Energy Laboratory for Energy-Related			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Health Research University of California Davis, CA 95616			
c. NAME OF RESPONSIBLE INDIVIDUAL DACRE, J C				c. NAME OF PRINCIPAL INVESTIGATOR GOLDMAN, M			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 916-752-1340			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY CIVILIAN APPLICATION M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Agents; (U) VX; (U) Toxicology; (U) Teratology; (U) Health Effects; (U) Laboratory Animals; (U) Rats; (U) Rabbits; (U) Chickens; (U) RAM V							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) PO							
23. (U) To investigate the teratologic and mutagenic potential and health hazards of agent VX.							
24. (U) Studies will be conducted using standard protocols in rats, New Zealand white rabbits, and chickens. Placental transfer studies will be conducted in rats using <sup>14</sup> C-VX.							
25. (U) 8502 - 8509. The following studies have been completed and draft final reports have been prepared: Ames assay, Saccharomyces assay, teratology in rats, mouse lymphoma study, and the acute delayed neuropathy in chickens. The following studies are in progress: dominant lethal study in rats, and a subchronic delayed neuropathy study in chickens. The following studies have been completed and reports are in preparation: teratology in rabbits, a 3-generation reproductive study in rats, 90-day oral study in rats.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305392	2. DATE OF SUMMARY 85 10 18	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 10 16	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	63764A	3M463764D995	AA		036		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	86-01					
11. TITLE (Precede with Security Classification Code) (U) Toxicity Studies on Agents GB and GD							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE 84 09		14. ESTIMATED COMPLETION DATE 86 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 09		EXPIRATION 86 06		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER 84PP4855						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		85		0.1	
e. KIND OF AWARD CON		f. CUM/TOTAL 421382		86		5.9	
						421	
						00	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Department of Energy Laboratory for Energy-Related			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Health Research University of California Davis, CA 95616			
c. NAME OF RESPONSIBLE INDIVIDUAL DACRE, J C				c. NAME OF PRINCIPAL INVESTIGATOR GOLDMAN, M			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 916-752-1341			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Toxicity; (U) Mutagenicity; (U) Sarin (GB); (U) Soman (GD); (U) In Vitro Tests; (U) PO; (U) RAM III							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To investigate the toxic and mutagenic potential and health hazards of agents GB and GD.							
24. (U) The toxic and mutagenic potential of agents GB and GD will be assessed using the following assays: Ames Test, Mouse Lymphoma Assay, In Vitro Sister-Chromatid Exchange Assay, and Unscheduled DNA Synthesis in Rat Hepatocytes. If required, an in vivo cytogenetics assay also will be performed using laboratory rodents.							
25. (U) 8410 - 8509. All the above tests are now on-line and positive controls are being evaluated. The agents are on hand and the definitive studies will be started by October 1985.							



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305445	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 18	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT 63764A	PROJECT NUMBER 3M463764D995	TASK AREA NUMBER AA	WORK UNIT NUMBER 037			
a. PRIMARY							
b. CONTRIBUTING							
c. CONTRIBUTING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Chemistry and Toxicology of Water Treated with Hypochlorite to Detoxify Chemical Agent VX							
12. SUBJECT AREAS 06 20 Toxicology; 07 03 Organic Chemistry; 15 02 Chemical, biological and radiological warfare							
13. START DATE 84 09		14. ESTIMATED COMPLETION DATE 85 12		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 10		EXPIRATION 85 12		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER 84PP4858						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		0.6	
e. KIND OF AWARD CON		f. CUM/TOTAL 391000		85		3.3	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Department of Energy Richland Operations Office			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Richland, WA 99352			
c. NAME OF RESPONSIBLE INDIVIDUAL ROSENBLATT, D H				c. NAME OF PRINCIPAL INVESTIGATOR KALKWARF, D R			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 509-376-3809			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) VX; (U) Hypochlorite; (U) Hypochlorous Acid; (U) Chlorination; (U) Chemical Agents; (U) Water Treatment; (U) Detoxification; (U) Decontamination;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) VX; (U) Hygiene & Sanitation; (U) Lab Animals; (U) Rats; (U) PO							
<p>23. (U) Verify previous evidence for increased anti-ChE activity when hypochlorite reacts with a stoichiometric ratio of chemical agent VX in dilute aqueous solution; correlate this effect with toxicity and blood ChE levels in rats; and identify chemical intermediates and products formed in aqueous solutions of VX and hypochlorite.</p> <p>24. (U) Dilute aqueous solutions of VX will be mixed with near-stoichiometric ratios of hypochlorite solution at pH 7 to test for increased anti-ChE activity with time. Should anti-ChE activity increase with time, the reaction mixture will be quenched and retested to see if the increase is reversible. Studies will be conducted to test the toxicity of hypochlorite-treated VX solutions injected into rats. VX solutions will be mixed with hypochlorite at various values of pH, VX concentration and VX:hypochlorite ratios; the identities and concentrations of the products will be sought by analytical techniques.</p> <p>25. (U) 8503 - 8509. Safety procedure evaluation is completed.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305394	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(A) 636	
3. DATE PREV SUM'RY 85 05 02	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		63764A	3M463764D995	AA	038		
b. CONTRIBUTING							
c. DISCONTINUING		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Toxicity Studies on Lewisite and Sulfur Mustard Agents							
12. SUBJECT AREAS 06 10 Industrial (occupational) Medicine; 06 20 Toxicology							
13. START DATE 84 09		14. ESTIMATED COMPLETION DATE 87 03		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 09		EXPIRATION 87 03		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER 84PP4865							
c. TYPE PP		d. AMOUNT -0-		84	7.1	500	
e. KIND OF AWARD CON		f. CUM/TOTAL 1000000		85	7.1	500	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Battelle Pacific Northwest Laboratories Department of Energy			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Battelle Boulevard Richland, WA 99352			
c. NAME OF RESPONSIBLE INDIVIDUAL FINCH, R A				c. NAME OF PRINCIPAL INVESTIGATOR SASSER, L			
d. TELEPHONE NUMBER (include area code) 301-663-7104				d. TELEPHONE NUMBER (include area code) 509-376-2560			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Toxicity; (U) Mutagenicity; (U) Lewisite; <del>(U) Sulfur Mustard; (U) In Vitro Tests; (U) Lab Animals; (U) Rats; (U) RAM V; (U) PO</del>							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To investigate the toxic and mutagenic potential and health hazards of lewisite and sulfur mustard.							
24. (U) The toxic and mutagenic potential of lewisite and sulfur mustard will be assessed using the following tests: Ames Test, CHO/HGPRT Forward Mutation Assay, In Vitro Sister-Chromatid Exchange and Chromosome Aberration Assay, and Unscheduled DNA Synthesis in Rat Hepatocytes. If required, an in vivo cytogenetics assay also will be performed using laboratory rodents. In addition to these tests, a 90-day subchronic toxicity study, a modified dominant lethal study, and a 2-generation reproductive toxicity study will be performed using laboratory rats.							
25. (U) 8502 - 8509. Ames test on sulfur mustard has been completed and the data is being analyzed. The 90-day subchronic study on sulfur mustard has been initiated. Draft protocols for the mammalian cell in vitro mutagenicity tests on sulfur mustard have been received and are being reviewed.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA308759	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 27	4. KIND OF SUMMARY D CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		63764A	3M463764D995	AA	039		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Toxicity Studies on Agents GB and GD (Phase II)							
12. SUBJECT AREAS 06 10 Industrial (Occupational) Medicine; 06 20 Toxicology							
13. START DATE 85 08		14. ESTIMATED COMPLETION DATE 88 07		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 07		EXPIRATION 88 07		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER		85PP5868				b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT -0-		84		0.0	
e. KIND OF AWARD CON		f. CUM/TOTAL 500000		85		6.0	
						500	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME National Center for Toxicological Research			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Food and Drug Administration Dept. of Health & Human Services Jefferson, AR 72079			
c. NAME OF RESPONSIBLE INDIVIDUAL DACRE, J C				c. NAME OF PRINCIPAL INVESTIGATOR BUCCI, T J			
d. TELEPHONE NUMBER (include area code) 301-663-2014				d. TELEPHONE NUMBER (include area code) 501-541-4027			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Toxicity; (U) Savin (GB); (U) Soman (GB); (U) Reproduction; (U) Subchronic; (U) Delayed Neuropathy; (U) PO; (U) RAM V; (U) Rats;							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code) (U) Lab Animals							
23. (U) To investigate the toxic, reproductive, subchronic and delayed neuropathy potential and health hazards of agents GB and GD.							
24. (U) The toxicity will be assessed using the following tests: 90 day study in rats, modified dominant lethal study in rats; two-generation reproduction study in rats; and a delayed neuropathy study in chickens.							
25. (U) None.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DAOH0057	2. DATE OF SUMMARY 85 03 25	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 03 12	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	64717A	3S464717D832	BA	022			
b. CONTRIBUTING							
c. COUNTRY	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Military Low Capacity X-Ray Apparatus, Field							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment							
13. START DATE 82 03		14. ESTIMATED COMPLETION DATE 83 12		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 82 03		EXPIRATION 83 12		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER DAMD17-82-C-2013						b. FUNDS (In thousands)	
c. TYPE U		d. AMOUNT 0		84		0.0	
e. KIND OF AWARD CON		f. CUM/TOTAL \$484,623		85		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Barnes Engineering Company/ General X-Ray Corporation			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 22 High Street Norwalk, CN 06851			
c. NAME OF RESPONSIBLE INDIVIDUAL Salisbury, L L				c. NAME OF PRINCIPAL INVESTIGATOR Larocque, G M			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 203-853-7924			
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) X-Ray; (U) Microprocessor; (U) Field Equipment; (U) Portable; (U) RAM II							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) The objective of this research and development contract is acquisition of the following items: (a) two final preproduction prototype low capacity X-ray units with containers; (b) six copies each of final operator and maintenance manuals; (c) one set of all functional drawings to MIL-D-1000 level III for the X-ray unit; (d) three sets of all functional drawings to MIL-D-1000 level III for each component and container; (e) three sets of all functional drawings to MIL-D-1000 level III for each component of production tooling for the X-ray unit and containers and one complete set of all production tooling; (f) draft specification package for the X-ray unit and containers; and (g) two complete sets of repair parts and special tools. This lightweight, portable X-ray unit is required for use in small military medical units outside of military field hospitals and for bedside use in field hospitals.</p> <p>24. (U) The contractor will provide all the necessary qualified personnel, facilities, material and equipment, services, and related administrative support required for the conduct of research and development to provide two prototype low capacity X-ray units that will meet the Army's operational requirements and characteristics.</p> <p>25. (U) (8403-8503) This project was terminated in March 1984 because the contractor did not conform to the essential characteristics of the contract. No additional funds were provided to extend the effort. Contract effort is considered complete.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA304534	2. DATE OF SUMMARY 85 09 11	REPORT CONTROL SYMBOL DD-DR&E(IAR) 636	
3. DATE PREV SUM'RY 85 01 07	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N DX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		64757A	3S464757D848	CB	002		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Chemical Agent Testing of the Chemical Warfare Agent Protective Patient Wrap							
12. SUBJECT AREAS 1502 Chemical, biological, and radiological warfare; 0612 Medical and hospital equipment							
13. START DATE 84 06		14. ESTIMATED COMPLETION DATE 86 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD D. Other Gov't	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 09		EXPIRATION 86 06		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER 84PP4849						b. FUNDS (In thousands)	
c. TYPE PP		d. AMOUNT 0		84		6.0	
e. KIND OF AWARD CON		f. CUM/TOTAL \$720,110		85		3.5	
						720	
						0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME US Army Dugway Proving Ground			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				ATTN: STEDP-PO			
c. NAME OF RESPONSIBLE INDIVIDUAL Reams, W H				b. ADDRESS Dugway, UT 84022			
d. TELEPHONE NUMBER (include area code) 301-663-2144				c. NAME OF PRINCIPAL INVESTIGATOR Rice, W			
21. GENERAL USE Foreign Intelligence Considered MILITARY/CIVILIAN APPLICATION: M				d. TELEPHONE NUMBER (include area code) 801-522-3531			
				e. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Chemical Defense; (U) Patient Treatment; (U) Chemical Agent Protection; (U) RAM V; (U) PO							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To test protective patient wraps to determine their effectiveness in protecting patients from chemical warfare agents present on the chemical warfare battlefield.</p> <p>24. (U) Protective patient wraps developed by the US Army Natick Research and Development Center under Intra-Army Order 1012 will be tested at Dugway Proving Ground, UT, to determine their effectiveness in protecting patients from chemical warfare agents.</p> <p>25. (U) (8501-8509) Testing of candidate materials is continuing but has been delayed by higher priority projects at Dugway. Results of physiological tests at the US Army Research Institute of Environmental Medicine were used to eliminate four of the six candidate fabrics from further testing. This was done to accelerate testing of the remaining two candidate fabrics.</p>							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA305391	2. DATE OF SUMMARY 85 03 25	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 01 04	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER		WORK UNIT NUMBER		
a. PRIMARY	65804A	3P665804M802	BA		004		
b. CONTRIBUTING							
c. CONTRACTING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code) (U) Medical Support - Suction and Infusion Devices							
12. SUBJECT AREAS 0612 Medical and Hospital Equipment; 0602 Bioengineering							
13. START DATE 84 03	14. ESTIMATED COMPLETION DATE 84 11		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 11		EXPIRATION 84 11		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4065				84		0.6	
c. TYPE U		d. AMOUNT 0		85		0.0	
e. KIND OF AWARD CON				f. CUM/TOTAL \$47,073		47	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Triangle Research and Development Corp.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 12696 Research Triangle Park, NC 27709			
c. NAME OF RESPONSIBLE INDIVIDUAL Conway, W H				c. NAME OF PRINCIPAL INVESTIGATOR Colvin, D P			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 919-467-2878			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Aspirator; (U) Suction; (U) Infusion Device; (U) Intravenous; (U) RAM II; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To investigate the concept and produce prototype suction and infusion devices that are gravity independent and powered by nonelectrical sources.							
24. (U) Investigate various small mechanical power sources, such as constant force spring motors, etc., for use with these devices.							
25. (U) (8403-8410) Constant force spring motors were investigated, and two breadboard devices were produced to demonstrate the concept. A final report has been received, and the project is complete.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303963	2. DATE OF SUMMARY 85 10 01	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 07 08	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	65804A	3P665804M802	EA	161			
b. CONTRIBUTING	63751A	3M463751D993	CA	009			
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) A Portable Oxygen Concentrator for Emergency Use							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0602 Bioengineering							
13. START DATE 84 04	14. ESTIMATED COMPLETION DATE 87 05	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract			
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 11	EXPIRATION 87 05	FISCAL YEARS		a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4106		85		2.0	204		
c. TYPE U	d. AMOUNT 0	86		2.5	333		
e. KIND OF AWARD CON	f. CUM/TOTAL \$601,989						
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Maxdem Incorporated			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 267 S. Fair Oaks Avenue Pasadena, CA 91105			
c. NAME OF RESPONSIBLE INDIVIDUAL O'Connor, R J				c. NAME OF PRINCIPAL INVESTIGATOR Marrocco, M			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 213-356-9951			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Medical; (U) Oxygen; (U) Portable; (U) Battery Powered; (U) RAM V; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To demonstrate the feasibility of developing an electrically powered device using a novel concept for the separation and concentration of oxygen from the air.							
24. (U) Materials and techniques of superoxide chemistry will be utilized to electrically separate oxygen from the air and concentrate it for field medical use.							
25. (U) (8506-8509) Phase II effort has begun. A test cell has been fabricated for experiments using different experimental conditions and materials for oxygen production. Methods for stabilizing superoxide in water are being investigated.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA303232	84 12 17	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A WORK UNIT
84 02 01	K. COMPLETION	U	U		CX	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	65804A	3P665804M802	BA	162		
b. CONTRIBUTING						
c. CHMTR/RECORDING	CARDS					
11. TITLE (Precede with Security Classification Code)						
(U) High Pressure Capillary Infusion Device						
12. SUBJECT AREAS						
0612 Medical and hospital equipment; 0602 Bioengineering						
13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
84 01	84 07	DA		B. Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE	84 01	EXPIRATION	84 07	FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER	DAMD17-84-C-4066					
c. TYPE	U	d. AMOUNT	0	84	0.5	62
e. KIND OF AWARD	CON	f. CUM/TOTAL	\$61,969	85	0.0	0
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Laguna Research Laboratory		
b. ADDRESS (include zip code)				b. ADDRESS		
Fort Detrick Frederick, MD 21701-5010				21421 Stans Lane Laguna Beach, CA 92651		
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR		
O'Connor, R J				Loos, H G		
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)		
301-663-7527				714-494-7858		
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code)						
(U) Medical; (U) Intravenous (IV) Fluids; (U) Infusion; (U) Blood; (U) Nongravitational Intravenous; (U) RAM II; (U) SBIR						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) To develop a gravity independent intravenous (IV) infusion device for use in the field medical environment.						
24. (U) Determine the feasibility of using a constant high pressure to produce IV flow through a capillary. Effects of temperature, head changes, and flow rate variations as well as factors such as size, weight, and avoidance of bubbles will be considered.						
25. (U) (8401-8407) The contractor performed studies as specified in the contract and presented theoretical data and sketches for a proposed system. A final report has been received detailing these efforts. The contractor anticipates submitting a phase II proposal.						



RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303162	2. DATE OF SUMMARY 85 06 28	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 04 15	4. KIND OF SUMMARY D. CHANGE	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	65804A	3P665804M802	BA	163			
b. CONTRIBUTING							
c. <del>CHUNKING</del>	DA LRRDAP, FY 86-01						
11. TITLE (Precede with Security Classification Code) (U) Development of Lightweight, High Capacity, Portable Oxygen Systems for Battlefield Medical Support							
12. SUBJECT AREAS 0612 Medical and hospital equipment; 0611 Life support; 1502 Chemical, biological, and radiological warfare							
13. START DATE 84 01		14. ESTIMATED COMPLETION DATE 87 09		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 11		EXPIRATION 87 09		FISCAL YEARS	a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)	
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4071							
c. TYPE U		d. AMOUNT \$242,000		85	2.0	146	
e. KIND OF AWARD SUP		f. CUM/TOTAL \$449,770		86	2.5	242	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Guild Associates, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS Worthington, OH 43085			
c. NAME OF RESPONSIBLE INDIVIDUAL O'Connor, R J				c. NAME OF PRINCIPAL INVESTIGATOR Schlaechter, J			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 614-885-2962			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Medical; (U) Oxygen; (U) Portable; (U) Pressure-Swing Adsorption; (U) RAM II; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a high capacity, reliable, lightweight oxygen generator system optimized for battlefield support.							
24. (U) The delivery conditions required for a battlefield unit will be defined concisely, and existing facilities will be adopted to this definition. After results are analyzed, a preliminary design will be recommended.							
25. (U) (8405-8506) A phase II proposal has been received and selected for funding. This effort is being treated as an extension of phase I and is based on a resumption of this effort as of 16 September 1985.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL
				DA303413	85 05 07	DD-DR&E(AR) 636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N	9. LEVEL OF SUM A. WORK UNIT
84 05 21	K. COMPLETION	U	U		CX	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY	65804A	3P665804M802	BA	166		
b. CONTRIBUTING						
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code)						
(U) A Compact Self-Contained, Pneumatically Driven Suction System for Medical Support						
12. SUBJECT AREAS						
0612 Medical and hospital equipment; 0602 Bioengineering						
13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD		
84 01	84 07	DA		B. Contract		
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		
a. DATE EFFECTIVE	84 01	EXPIRATION	84 07	FISCAL YEARS	a. PROFESSIONAL WORK YEARS	b. FUNDS (In thousands)
b. CONTRACT/GRANT NUMBER	DAMD17-84-C-4070					
c. TYPE	U	d. AMOUNT	0	84	0.5	47
e. KIND OF AWARD	CON	f. CUM/TOTAL	\$47,195	85	0.0	0
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION		
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Engineering Incorporated		
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 41 Research Drive Langley Research Park Hampton, VA 23666		
c. NAME OF RESPONSIBLE INDIVIDUAL Reams, W H				c. NAME OF PRINCIPAL INVESTIGATOR Brooks, G W		
d. TELEPHONE NUMBER (include area code) 301-663-2144				d. TELEPHONE NUMBER (include area code) 804-865-0100		
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)		
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L				g. NAME OF ASSOCIATE INVESTIGATOR (if available)		
22. KEYWORDS (Precede EACH with Security Classification Code)						
(U) Aspiration; (U) Suction; (U) Pneumatic; (U) Medical; (U) RAM II; (U) SBIR						
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)						
23. (U) To develop a self-contained, lightweight, portable pneumatically driven suction system to provide suction varying from 10 to 100 centimeters of water.						
24. (U) Define the system components and the design concept of the suction device. The final report will summarize the characteristics and expected performance of the system and will outline the effort required to complete the final design, construct the system, and test prototypes.						
25. (U) (8404-8505) The suction system and components were defined, and an operating model was made and tested. The final report presented sketches and test data. Because of its simplicity, the system has military potential. A phase II effort was submitted for review but was not selected for continuation.						

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303411	2. DATE OF SUMMARY 85 03 25	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 02 27	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		65804A	3P665804M802	EC	168		
b. CONTRIBUTING							
c. CONTRIBUTING		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) The Multichannel Signal Processing Technique Based on Logical Cleansing							
12. SUBJECT AREAS 0602 Bioengineering; 0612 Medical and hospital equipment							
13. START DATE 84 02		14. ESTIMATED COMPLETION DATE 84 08		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 02		EXPIRATION 84 08		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4034						b. FUNDS (In thousands)	
c. TYPE U		d. AMOUNT 0		84		0.5	
e. KIND OF AWARD CON		f. CUM/TOTAL \$48,115		85		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Electronic Design and Research Company, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 770 Medical Towers South 234 East Gray Street Louisville, KY 40202			
c. NAME OF RESPONSIBLE INDIVIDUAL Salisbury, L L				c. NAME OF PRINCIPAL INVESTIGATOR Shvartsman, V			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 502-585-5111			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Electrical Noise; (U) Noise Reduction; (U) Logical Cleansing; (U) Noise Filtering; (U) RAM V; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a technique for the detection of physiological signals with negative signal-to-noise ratios.							
24. (U) Using digital multichannel signal processing techniques, develop a special algorithm for extracting the desired signal.							
25. (U) (8402-8408) A computer algorithm was developed, and a circuitry was fabricated to implement a multichannel filter. The system performed as predicted. The final report has been received. No further work is anticipated.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION DA303467	2. DATE OF SUMMARY 85 03 26	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 84 02 27	4. KIND OF SUMMARY H. TERMINATION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		65804A	3P665804M802	BA	169		
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Field Laboratory for Blood Gases, pH and K+							
12. SUBJECT AREAS 06 12 Medical and hospital equipment; 06 02 Bioengineering							
13. START DATE 84 02		14. ESTIMATED COMPLETION DATE 84 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 84 02		EXPIRATION 84 06		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER DAMD17-84-C-4069						b. FUNDS (In thousands)	
c. TYPE S		d. AMOUNT 0		84		0.0	
e. KIND OF AWARD CON		f. CUM/TOTAL \$5,142		85		0.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Biochem International, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS P.O. Box 13157 Milwaukee, WI 53213			
c. NAME OF RESPONSIBLE INDIVIDUAL Salisbury, L L				c. NAME OF PRINCIPAL INVESTIGATOR Lai, N C J			
d. TELEPHONE NUMBER (include area code) 301-663-7527				d. TELEPHONE NUMBER (include area code) 414-542-3100			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Blood Gas; (U) Field Laboratory; (U) Blood Laboratory; (U) Potassium Ion; (U) Acidity Measurement; (U) RAM II; (U) SBIR							
23. TECHNICAL OBJECTIVE 24 APPROACH 25 PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To explore the development of a small, portable blood gas analyzer for field use.							
24. (U) Investigate the application of ion selective membranes for the detection and measurement of blood gases, acidity, and potassium ion.							
25. (U) (8402-8406) Due to internal corporation problems, no effort was expended by the contractor on this project. The requirement for submitting a final report has been waived. The contract is being terminated. Certain validated closing costs were paid.							

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION	2. DATE OF SUMMARY	REPORT CONTROL SYMBOL	
					85 10 01	DD-DR&E(AR) 636	
3. DATE PREV SUM'RY	4. KIND OF SUMMARY	5. SUMMARY SCTY	6. WORK SECURITY	7. REGRADING	8. DISB'N INSTR'N		9. LEVEL OF SUM A. WORK UNIT
85 06 21	K. COMPLETION	U	U		CX		
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	65804A	3P665804M802	CA	170			
b. CONTRIBUTING							
c. COMMENCING	DA LRRDAP, FY 85-01						
11. TITLE (Precede with Security Classification Code)							
(U) Development of an Individual Blast Overpressure Dosimeter							
12. SUBJECT AREAS							
0605 Clinical medicine; 0612 Medical and hospital equipment							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING ORGANIZATION		16. PERFORMANCE METHOD	
84 12		85 08		DA		B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE		EXPIRATION		FISCAL YEARS		a. PROFESSIONAL WORK YEARS	
84 12		85 08					
b. CONTRACT/GRANT NUMBER				b. FUNDS (In thousands)			
DAMD17-85-C-5053							
c. TYPE		d. AMOUNT		84		0.0	
U		0		85		1.5	
e. KIND OF AWARD		f. CUM/TOTAL				0	
CON		\$115.488				115	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME				a. NAME			
US Army Medical Bioengineering Research & Development Laboratory				ANCO Engineers, Inc.			
b. ADDRESS (include zip code)				b. ADDRESS			
Fort Detrick Frederick, MD 21701-5010				9937 Jefferson Boulevard Culver City, CA 90230-3591			
c. NAME OF RESPONSIBLE INDIVIDUAL				c. NAME OF PRINCIPAL INVESTIGATOR			
Arnold, M F				Bernstein, K			
d. TELEPHONE NUMBER (include area code)				d. TELEPHONE NUMBER (include area code)			
301-663-2144				213-204-5050			
21. GENERAL USE				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION L				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code)							
(U) Blast; (U) Overpressure; (U) Dosimeter; (U) Blast Injury; (U) Concussion; (U) RAM II; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a device to record blast overpressure exposure.							
24. (U) Pressure pulses will deform a diaphragm into holes in the support. The blast overpressure will be measured by the diameter of the hole into which the diaphragm is forced.							
25. (U) (8506-8509) Tests have been completed on the dosimeter prototypes, and the final report has been received. Test articles were successfully demonstrated in the contractor's shock tube. The contractor anticipates submitting a phase II proposal.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA306670	2. DATE OF SUMMARY 85 07 12	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 03 13	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A WORK UNIT	
10. NO./CODES:	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER			
a. PRIMARY	65804A	3P665804M802	BA	171			
b. CONTRIBUTING							
c. <del>CONTRIBUTING</del>	DA LRRDAP, FY	85-01					
11. TITLE (Precede with Security Classification Code) (U) Development of an Individual Blast Overpressure Dosimeter							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment							
13. START DATE 84 12	14. ESTIMATED COMPLETION DATE 85 06	15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract			
17. CONTRACT/GRANT			18. RESOURCES ESTIMATE				
a. DATE EFFECTIVE 84 12	EXPIRATION 85 06	FISCAL YEARS		a. PROFESSIONAL WORKYEARS	b. FUNDS (In thousands)		
b. CONTRACT/GRANT NUMBER DAMD17-85-C-5068							
c. TYPE J	d. AMOUNT 0	84		0.0	0		
e. KIND OF AWARD CON	f. CUM/TOTAL \$41,203	85		1.0	41		
19. RESPONSIBLE DOD ORGANIZATION			20. PERFORMING ORGANIZATION				
a. NAME US Army Medical Bioengineering Research & Development Laboratory			a. NAME R. V. Meyer, Inc.				
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010			b. ADDRESS Lake Shore Drive, P.O. Box 889 Center Harbor, NH 03226				
c. NAME OF RESPONSIBLE INDIVIDUAL Arnold, M F			c. NAME OF PRINCIPAL INVESTIGATOR Meyer, R V				
d. TELEPHONE NUMBER (include area code) 301-663-2144			d. TELEPHONE NUMBER (include area code) 603-253-6310				
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: L			f. NAME OF ASSOCIATE INVESTIGATOR (if available)				
			g. NAME OF ASSOCIATE INVESTIGATOR (if available)				
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Blast; (U) Overpressure; (U) Dosimeter; (U) Blast Injury; (U) Concussion; (U) RAM II; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
23. (U) To develop a device to record blast overpressure exposure.							
24. (U) Pressure pulses will extrude a lead diaphragm into a cavity. The design of the cavity will permit measurement of the blast pressure.							
25. (U) (8412-8507) The contractor evaluated dosimeter concepts using metal foil over a cavity. Overpressure was measured by the deformation of the foil into the cavity. The dosimeter measured the blast overpressure; however, the metal foil diaphragm has difficulty integrating the effects of pressure, rise time, duration and reflected pressure waves, all of which affect blast injury. A final report has been received and approved. A phase II proposal has been submitted for consideration.							

<b>RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY</b>				1. AGENCY ACCESSION DA306020	2. DATE OF SUMMARY 85 07 29	REPORT CONTROL SYMBOL DD-DR&E(AR) 636	
3. DATE PREV SUM'RY 85 06 27	4. KIND OF SUMMARY K. COMPLETION	5. SUMMARY SCTY U	6. WORK SECURITY U	7. REGRADING	8. DISB'N INSTR'N CX	9. LEVEL OF SUM A. WORK UNIT	
10. NO./CODES:		PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER		
a. PRIMARY		65804A	3P665804M802	BA	172		
b. CONTRIBUTING							
c. CONTINUING		DA LRRDAP, FY	85-01				
11. TITLE (Precede with Security Classification Code) (U) Development of an Individual Blast Overpressure Dosimeter							
12. SUBJECT AREAS 0605 Clinical medicine; 0612 Medical and hospital equipment							
13. START DATE 84 11		14. ESTIMATED COMPLETION DATE 85 06		15. FUNDING ORGANIZATION DA		16. PERFORMANCE METHOD B. Contract	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE			
a. DATE EFFECTIVE 85 05		EXPIRATION 85 06		FISCAL YEARS		a. PROFESSIONAL WORKYEARS	
b. CONTRACT/GRANT NUMBER DAMD17-85-C-5031						b. FUNDS (In thousands)	
c. TYPE U		d. AMOUNT 0		84		0.0	
e. KIND OF AWARD CON		f. CUM/TOTAL \$45,026		85		1.0	
19. RESPONSIBLE DOD ORGANIZATION				20. PERFORMING ORGANIZATION			
a. NAME US Army Medical Bioengineering Research & Development Laboratory				a. NAME Scientific Service, Inc.			
b. ADDRESS (include zip code) Fort Detrick Frederick, MD 21701-5010				b. ADDRESS 517 E. Bayshore Redwood City, CA 94063			
c. NAME OF RESPONSIBLE INDIVIDUAL Arnold, M F				c. NAME OF PRINCIPAL INVESTIGATOR Zaccor, J V			
d. TELEPHONE NUMBER (include area code) 301-663-2144				d. TELEPHONE NUMBER (include area code) 415-368-2931			
21. GENERAL USE Foreign Intelligence Not Applicable MILITARY/CIVILIAN APPLICATION: M				f. NAME OF ASSOCIATE INVESTIGATOR (if available)			
				g. NAME OF ASSOCIATE INVESTIGATOR (if available)			
22. KEYWORDS (Precede EACH with Security Classification Code) (U) Blast; (U) Overpressure; (U) Dosimeter; (U) Blast Injury; (U) Concussion; (U) RAM II; (U) SBIR							
23. TECHNICAL OBJECTIVE 24. APPROACH 25. PROGRESS (Precede text of each with Security Classification Code)							
<p>23. (U) To develop a device to record blast overpressure exposure.</p> <p>24. (U) Pressure pulses will extrude a lead diaphragm into a cavity. The design of the cavity will permit measurement of the blast pressure.</p> <p>25. (U) (8504-8507) Dosimeter concepts using metal foil over a cavity were evaluated. The contractor used multiple cavities of graduation diameters and measured the overpressure by which diaphragm ruptured. The dosimeter measured the blast overpressure; however, the metal foil diaphragm has difficulty integrating the effects of pressure, rise time, duration and reflected pressure waves, all of which effect blast injury. A final report has been received and approved. A phase II proposal has been submitted for consideration.</p>							

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